

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6

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IN THE MATTER OF:
San Jacinto River Waste Pits Superfund Site
Pasadena, Harris County, Texas

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMOVAL ACTION

International Paper Company, Inc.
&
McGinnes Industrial Maintenance
Corporation

U.S. EPA Region 6
CERCLA Docket No. 06-12-10

Respondents

Proceeding Under Sections 104, 106(a), 107
and 122 of the Comprehensive
Environmental Response, Compensation,
and Liability Act, as amended; 42 U.S.C. §§
9604, 9606(a), 9607 and 9622



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TABLE OF CONTENTS

I.	JURISDICTION AND GENERAL PROVISIONS.....	3
II.	PARTIES BOUND	3
III.	DEFINITIONS.....	4
IV.	FINDINGS OF FACT.....	6
V.	CONCLUSIONS OF LAW AND DETERMINATIONS	11
VI.	SETTLEMENT AGREEMENT AND ORDER	12
VII.	DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON- SCENE COORDINATOR	12
VIII.	WORK TO BE PERFORMED.....	13
IX.	SITE ACCESS.....	17
X.	ACCESS TO INFORMATION	17
XI.	RECORD RETENTION.....	18
XII.	COMPLIANCE WITH OTHER LAWS.....	19
XIII.	EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES.....	19
XIV.	AUTHORITY OF ON-SCENE COORDINATOR	20
XV.	PAYMENT OF RESPONSE COSTS	20
XVI.	DISPUTE RESOLUTION	22
XVII.	FORCE MAJEURE	22
XVIII.	STIPULATED PENALTIES	23
XIX.	COVENANT NOT TO SUE BY EPA.....	25
XX.	RESERVATIONS OF RIGHTS BY EPA.....	26
XXI.	COVENANT NOT TO SUE BY RESPONDENTS	27
XXII.	OTHER CLAIMS.....	28
XXIII.	CONTRIBUTION	28
XXIV.	INDEMNIFICATION	28
XXV.	INSURANCE.....	29
XXVI.	FINANCIAL ASSURANCE	30
XXVII.	MODIFICATIONS	31
XXVIII.	NOTICE OF COMPLETION OF WORK	32
XXIX.	INTEGRATION/APPENDICES.....	32
XXX.	EFFECTIVE DATE	34

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and the International Paper Company and McGinnes Industrial Maintenance Corporation ("Respondents"). This Settlement Agreement provides for the performance of a removal action by Respondents and the reimbursement of certain response costs to be incurred by the United States at or in connection with the "San Jacinto River Waste Pits Superfund Site" (the "Site") and generally located in an area where the Interstate Highway 10 Bridge crosses over the San Jacinto River, east of the City of Houston between two unincorporated areas known as Channelview and Highlands in Harris County, Texas.
2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622, as amended ("CERCLA").
3. EPA has notified the State of Texas (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
4. EPA and Respondents recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondents in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondents do not admit, and retain the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of facts, conclusions of law, and determinations in Sections IV and V of this Settlement Agreement. Respondents agree to comply with and be bound by the terms of this Settlement Agreement and further agree that they will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA and upon Respondents and their heirs, successors and assigns. Any change in ownership or corporate status of a Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.
6. Respondents, without any admission of liability, agree for purposes of this Settlement Agreement to be jointly and severally liable for carrying out the Work required by this Settlement Agreement. In the event of the insolvency or other failure of any one or more Respondents to implement the requirements of this Settlement Agreement, the remaining Respondents shall complete all such requirements.

7. Respondents shall ensure that their contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondents shall be responsible for any noncompliance with this Settlement Agreement.

III. DEFINITIONS

8. Unless otherwise expressly provided in this Settlement Agreement, terms used in this Settlement Agreement which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:
- a. "Action Memorandum" shall mean the EPA Action Memorandum relating to the Site signed on April 2, 2010, by the Regional Administrator, EPA Region 6, or his delegate, and all attachments thereto. The "Action Memorandum" is attached as Appendix A.
 - b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*
 - c. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.
 - d. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXXII.
 - e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
 - f. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs, in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Paragraph 53 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), and Paragraph 88 (work takeover).
 - g. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the

interest accrues. The rate of interest is subject to change on October 1 of each year.

- h. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.
- i. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.
- j. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral.
- k. "Parties" shall mean EPA and Respondents.
- l. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.* (also known as the Resource Conservation and Recovery Act).
- m. "Respondents" shall mean the International Paper Company and McGinnes Industrial Maintenance Corporation and identified in Appendix B.
- n. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.
- o. "Site" shall mean the San Jacinto River Waste Pits Superfund Site located in Pasadena, Harris County, Texas, encompassing approximately 20.6 acre tract of land bounded on the south by Interstate Highway 10, on the east by the San Jacinto River main channel, and on the north and west by shallow water off the River's main channel and depicted generally on the map attached as Appendix C and an area of the San Jacinto River bottom, i.e, river sediment that is contaminated with certain hazardous materials released from the waste pits from the 20.6 acre tract .
- p. "State" shall mean the State of Texas.
- q. "Statement of Work" or "SOW" shall mean the statement of work for implementation of the time critical removal action, as set forth in Appendix D to this Settlement Agreement, and any modifications made thereto in accordance with this Settlement Agreement.
- r. "UAO" shall mean Unilateral Administrative Order for Remedial Investigation/Feasibility Study, CERCLA Docket No. 06-03-10 issued by EPA to Respondents on November 20, 2009.

- s. "Waste Material" shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).
- t. "Work" shall mean all activities Respondents are required to perform under this Settlement Agreement including the implementation of the time critical removal described in the Action Memorandum as described in Appendix A.

IV. FINDINGS OF FACT

- 9. The Site, as indicated in Attachment C, is in Harris County in the State of Texas. The Site itself has no specific street address. The Site is comprised of an area of land and an area of the San Jacinto River bottom, i.e., river sediment that is contaminated with certain hazardous materials from released waste paper mill sludge. The Site is located in an area where the Interstate Highway 10 Bridge crosses over the San Jacinto River, east of the City of Houston between two unincorporated areas known as Channelview and Highlands.
- 10. The Site includes an abandoned 20-acre tract of land ("Tract") consisting of two waste ponds containing hazardous substances partially submerged in the San Jacinto River as well as wherever those hazardous substances have been deposited, placed, or otherwise come to be located. Aerial photographs as early as the 1970s indicate the Tract inundated by the San Jacinto River.
- 11. Currently, the Tract is owned by Virgil C. McGinnes Trustee and is bounded on the south by Interstate Highway 10, on the east by the San Jacinto River main channel, and on the north and west by shallow water off the River's main channel. Virgil McGinnes is deceased, but was the officer, director, and major shareholder of McGinnes Industrial Maintenance Corporation ("MIMC") during the time hazardous substances were disposed at the Site.
- 12. MIMC was incorporated on August 31, 1965. Ten days later, MIMC acquired the assignment of an exclusive waste disposal contract to dispose of waste from the Champion Papers, Inc ("Champion") paper mill in Pasadena, Texas. MIMC removed waste materials from the Champion plant, transported the paper waste materials by MIMC barges, and unloaded the waste into ponds surrounded by levees at the Tract from September 13, 1965 through May 6, 1966.
- 13. According to Champion's business records, Champion's Pasadena paper mill produced pulp and paper using chlorine as a bleaching agent. These processes used various forms of chlorine, including liquid chloride, aluminum chloride, and sodium chlorate. The pulp bleaching process forms polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans as a by-product and those by-products are found in the paper mill sludge generated from this process.

14. Champion's waste paper sludge was placed by MIMC in two ponds on the Tract. Waste pond 1 is located on the western portion of the Tract totaling 132,386 square feet. Waste pond 2 is on the eastern portion of the Tract totaling 234,823 square feet.
15. On December 27, 1965, the Harris County Health Department ("HCHD") observed liquid waste being pumped out of one of the ponds at the Tract directly into the San Jacinto River. On December 28, 1965, the HCHD sent a letter to MIMC and Champion ordering them to stop discharging "black liquor" from the waste ponds into the San Jacinto River. In addition, the HCHD demanded that the levees surrounding the waste ponds be repaired.
16. In May 1966, the Texas Department of Health ("TDH") investigated Champion Paper's waste disposal practices. The TDH noted seepage on the western waste pond and deteriorating levees on the eastern waste pond. In addition, the TDH noted that storm events had the potential to cover the disposal area with water and wash out the levees.
17. On August 19, 1968, MIMC minutes indicated that the Board of Directors for MIMC met and voted that the Site property be abandoned. The MIMC minutes stated that the Site property was used during fiscal year 1966 and part of fiscal year of 1967 as a dump for waste materials hauled by MIMC.
18. Currently, the Tract is inactive and approximately half of the Tract's surface area, including the abandoned waste disposal ponds, is now submerged below the adjacent San Jacinto River's water surface.
19. The primary hazardous substances documented at the Site are polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. Dioxin concentrations as high as 41,300 parts per trillion have been found in soil and sediment samples collected from the Tract's disposal pond areas and from river sediments near the Tract. Sediments contaminated with high levels of dioxin have been found in the San Jacinto River both upstream and downstream from the Tract due to tidal influences.
20. The City of Houston conducted a toxicity study of the Houston Ship Channel including the San Jacinto River published in July 1995. Samples of sediment and fish and crab samples were collected in August 1993 and May 1994 for the study. Sediment samples collected northeast of the Tract indicated extremely high dioxin and furan levels. These dioxin and dibenzofuran levels were the highest values recorded in the entire Houston Ship Channel. In addition, fish and crab samples collected northeast of the Tract and 1 mile downstream from the Tract also indicated extremely high levels of dioxin and dibenzofuran.
21. In January 2004, The Texas Commission on Environmental Quality ("TCEQ") published a study of the Total Maximum Daily Loads ("TMDLs") for Dioxins in the Houston Ship Channel. Samples of sediment and fish tissue were collected in the summer of 2002, fall 2002, and spring 2003. The data collected indicated the continued presence of dioxin

contamination in the San Jacinto River surrounding the Tract. In addition, the fish and shellfish tissue samples collected indicated that the health-based standard was exceeded in 97% of fish samples and in 95% of the crab samples. Additional samples in the San Jacinto River surrounding the Tract were collected in the spring of 2004 and confirmed the high dioxin concentrations.

22. On April 14, 2005, the Texas Parks & Wildlife Department ("TPWD") referred the area consisting of the Tract to the U.S. EPA for evaluation under the Hazardous Ranking System as a potential Superfund site. The TPWD submitted a 1982 topographic map and aerial photographs of the Tract indicating much of the land area has been submerged due to subsidence. In addition, the TPWD cited the Houston Ship Channel Toxicity Study and the TMDLs for Dioxins in the San Jacinto River as indication that there was a risk that needed to be addressed at the Tract due to the unusually high dioxin readings collected northeast of the Tract as well as downstream from the Tract.
23. In July 2005, seven samples were collected from the Tract for the Hazardous Ranking System (HRS) Documentation Package. Each sample was found to contain a combination of the following chemicals, also known as, dioxin congeners:
 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
 - 1,2,3,7,8-Pentachlorodibenzodioxin
 - 1,2,3,4,7,8-Hexachlorodibenzodioxin
 - 1,2,3,6,7,8-Hexachlorodibenzodioxin
 - 1,2,3,7,8,9-Hexachlorodibenzodioxin
 - 1,2,3,4,6,7,8-Heptachlorodibenzodioxin
 - 2,3,7,8-Tetrachlorodibenzofuran
 - 1,2,3,7,8-Pentachlorodibenzofuran
 - 2,3,4,7,8-Pentachlorodibenzofuran
 - 1,2,3,4,7,8-Hexachlorodibenzofuran
 - 1,2,3,6,7,8-Hexachlorodibenzofuran
 - 2,3,4,6,7,8-Hexachlorodibenzofuran
 - 1,2,3,7,8,9-Hexachlorodibenzofuran
 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran
 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran

From these seven samples, the highest concentration of each dioxin congener (from any of samples) is listed below:

- 2,3,7,8-Tetrachlorodibenzo-p-dioxin = 18,500 parts per trillion (SE-08)
- 1,2,3,7,8-Pentachlorodibenzodioxin = 363 parts per trillion (SE-09)
- 1,2,3,4,7,8-Hexachlorodibenzodioxin = 4.83 parts per trillion (SE-09)
- 1,2,3,6,7,8-Hexachlorodibenzodioxin = 27.9 parts per trillion (SE-09)
- 1,2,3,7,8,9-Hexachlorodibenzodioxin = 10.2 parts per trillion (SE-09)
- 1,2,3,4,6,7,8-Heptachlorodibenzodioxin = 658 parts per trillion (SE-09)
- 2,3,7,8-Tetrachlorodibenzofuran = 41,300 parts per trillion (SE-08)

- 1,2,3,7,8-Pentachlorodibenzofuran = 3,770 parts per trillion (SE-10)
 - 2,3,4,7,8-Pentachlorodibenzofuran = 2,330 parts per trillion (SE-10)
 - 1,2,3,4,7,8-Hexachlorodibenzofuran = 8,660 parts per trillion (SE-10)
 - 1,2,3,6,7,8-Hexachlorodibenzofuran = 2,290 parts per trillion (SE-10)
 - 2,3,4,6,7,8-Hexachlorodibenzofuran = 349 parts per trillion (SE-10)
 - 1,2,3,7,8,9-Hexachlorodibenzofuran = 656 parts per trillion (SE-10)
 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran = 2,360 parts per trillion (SE-10)
 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran = 878 parts per trillion (SE-10)
24. According to the HRS Documentation Record, contaminants can be documented entering the San Jacinto River by direct observation. A large portion of the ponds are continually inundated by the San Jacinto River and contaminated sediment within the source area are in direct contact with the river water as documented in the December 1987, December 1989, February 1992, April 1998, June 1999, May 2002, February 2003, and April 2005 aerial photographs of the Tract. There is no containment to prevent the migration of hazardous substances from the waste ponds.
25. Chemical analysis, conducted for the HRS Documentation Record, confirmed that dioxin and dibenzofuran contaminants are entering the San Jacinto River. Chemical analysis documented the presence of numerous dioxin congeners in the source sediments. In addition, sediment samples collected within the surface waste ponds indicate that concentrations of hazardous substances are present at levels significantly greater than upstream and downstream background levels and in concentrations greater than the corresponding by Contract-Required Quantitation Levels.
26. According to the HRS Documentation Record, routes of exposure include, but are not limited to: Human direct dermal contact with contaminated sediment or water; human ingestion of contaminated sediment or water; human inhalation of contaminated sediment or water; human direct dermal contact with contaminated ecological receptors; human ingestion of contaminated ecological receptors; and ecological bioaccumulation of contaminants at every trophic level of the food web.
27. Both human and ecological health is threatened by releases of hazardous substances from the Tract. Humans trespass on and around the site to capture ecological receptors for sport and subsistence. Ecological receptors include, but are not limited to: Fish, birds, mammals, amphibians, reptiles, macro-invertebrates, micro-invertebrates, and plants. Ecological health is also threatened by bioaccumulation of hazardous substances released from the north tract/source area at every trophic level of the food chain.
28. Dioxins from natural and anthropogenic (man-made) sources have been widely distributed throughout the environment. Almost every living creature has been exposed to dioxins. Studies have shown that exposure to dioxins at high enough doses may cause a number of adverse health effects.

29. 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) is considered the most toxic of the dioxins and dibenzofurans. Non-2,3,7,8-TCDD dioxins and dibenzofurans are usually expressed as a fraction of the toxicity attributed to 2,3,7,8-TCDD. In addition, chlorinated dibenzo-p-dioxins (CDDs) are generally found together with other structurally related chlorinated chemicals, such as chlorinated dibenzofurans and polychlorinated biphenyls.
30. The most common health effect in people exposed to large amounts of dioxins, in particular 2,3,7,8-TCDD, is chloracne. Chloracne cases have typically been the result of accidents or significant contamination events. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face and upper body. Other skin effects noted in people exposed to high doses of 2,3,7,8-TCDD include skin rashes, discoloration, and excessive body hair. Changes in blood and urine that may indicate liver damage also are seen in people. Exposure to high concentrations of CDDs may induce long-term alterations in glucose metabolism and subtle changes in hormone levels.
31. In certain animal species, 2,3,7,8-TCDD is especially harmful and can cause death after a single exposure. Exposure to lower levels can cause a variety of effects in animals, such as weight loss, liver damage, and disruption of the endocrine system. In many species of animals, 2,3,7,8-TCDD weakens the immune system and causes a decrease in the system's ability to fight bacteria and viruses. In other animal studies, exposure to 2,3,7,8-TCDD has caused reproductive damage and birth defects. Some animal species exposed to CDDs during pregnancy had miscarriages and the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy often had severe birth defects including skeletal deformities, kidney defects, and weakened immune responses.
32. Several studies suggest that exposure to 2,3,7,8-TCDD increases the risk of several types of cancer in people. Animal studies have also shown an increased risk of cancer from exposure to 2,3,7,8-TCDD.
33. The U.S. Department of Health and Human Services has determined that 2,3,7,8-TCDD may reasonably be anticipated to cause cancer and the World Health Organization has determined that 2,3,7,8-TCDD is a human carcinogen.
34. The Site was proposed for listing on the National Priorities List ("NPL") on September 19, 2007 (72 FR 53509), and was placed on the NPL effective March 19, 2008 (73 FR 14719).
35. Remedial Project Managers Leos and Tzhone conducted a site inspection on March 1, 2010. Visual inspection indicated evidence of grayish waste releasing into the San Jacinto River located in the Northwest corner of waste pond 1. In addition, waste pond 2 with its contaminated sediment, was observed to be under four feet of water and is continually releasing hazardous substances into the San Jacinto River.
36. On April 2, 2010, EPA issued an action memorandum for a time critical removal action at the San Jacinto River Waste Pits Superfund Site. The removal action is to stabilize the

Site, temporarily abating the release of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (and possible PCBs) into the waterway, until the Site is fully characterized and a remedy is selected.

37. Respondent International Paper Company, Inc. is a corporation incorporated in the state of New York. International Paper Company is the successor to Champion Papers, Inc. who arranged for disposal or treatment of hazardous substances, which were owned or possessed by said company, at the Site.
38. Respondent McGinnes Industrial Maintenance Corporation is a corporation incorporated in the state of Texas. McGinnes Industrial Maintenance Corporation operated the waste disposal facility at the Site. In addition, McGinnes Industrial Maintenance Corporation accepted hazardous substances for transport and selected the Site.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

39. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, EPA has determined that:
 - a. The San Jacinto River Waste Pits Superfund Site constitutes a "facility" within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
 - b. The contamination found at the Site, as identified in the Findings of Fact above, includes "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
 - c. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
 - d. Each Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is jointly and severally liable for performance of response action and for response costs incurred and to be incurred at the Site. Each of the Respondents is a "person" within the meaning of Section 101(21) of CERCLA, 42 U.S.C. § 9601(21). Respondent International Paper Company is the successor to Champion Papers, Inc., who arranged for disposal or treatment of materials containing hazardous substances, which were owned or possessed by said company, which came to be disposed at the Site and is thus a responsible party within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3). Respondent McGinnes Industrial Maintenance Corporation operated the waste disposal facility at the time of disposal of hazardous substances at which such hazardous substances were disposed of at the Site, and is accordingly a responsible party within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2). Respondent McGinnes Industrial Maintenance Corporation accepted hazardous substances for transport to the facility selected by Respondents, within the meaning of Section 107(a)(4) of CERCLA, 42 U.S.C. § 9607(a)(4).

- e. The conditions described in the Findings of Fact (Section IV) above constitute an actual or threatened of "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).
- f. The removal action required by this Settlement Agreement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VI. SETTLEMENT AGREEMENT AND ORDER

Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, it is hereby Ordered and Agreed that Respondents (without admitting any liability and subject to the provisions of Paragraph 4) shall comply with all provisions of this Settlement Agreement, including, but not limited to, all attachments to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

- 40. Respondents shall retain one or more contractors to perform the Work and shall notify EPA of the name(s) and qualifications of such contractor(s) within thirty (30) days of the Effective Date. Respondents shall also notify EPA of the name(s) and qualification(s) of any other contractor(s) or subcontractor(s) retained to perform the Work at least thirty (30) days prior to commencement of such Work. If Respondents retains contractors or subcontractors that EPA has previously approved to conduct other work at the Site, Respondents need only submit the contractors or subcontractors name for approval. The prior submittal regarding the contractors or subcontractors Quality Management Plan will be considered as part of Respondents submittal to conduct the Work under this Settlement Agreement. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondents. If EPA disapproves of a selected contractor, Respondents shall retain a different contractor and shall notify EPA of that contractor's name and qualifications within 5 days of EPA's disapproval. The proposed contractor must demonstrate compliance with ANSI/ASQC E-4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B0-1/002), or equivalent documentation as required by EPA. Any decision not to require submission of the contractor's QMP should be documented in a memorandum from the OSC and Regional QA personnel to the Site file.

41. Within twenty-one (21) days after the Effective Date, Respondents shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondents required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. If Respondents retain a Project Coordinator that EPA has previously approved to conduct other work at the Site, Respondents need only submit the Project Coordinator's name for approval. The prior submittal regarding the Project Coordinator's qualifications will be considered as part of Respondents' submittal to conduct the Work under this Settlement Agreement. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondents shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number, and qualifications within five (5) days following EPA's disapproval. Receipt by Respondents' Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by all Respondents.
42. EPA has designated Valmichael Leos of the Superfund Remedial Branch, Region 6, as its On-Scene Coordinator ("OSC"). Except as otherwise provided in this Settlement Agreement, Respondents shall direct all submissions required by this Settlement Agreement to the OSC at 1445 Ross Avenue, Dallas, Texas 75202.
43. EPA and Respondents shall have the right, subject to Paragraph 41, to change their respective designated OSC or Project Coordinator. Respondents shall notify EPA five (5) days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notice.

VIII. WORK TO BE PERFORMED

44. Respondents shall perform, at a minimum, all actions necessary to implement the Time Critical Removal Action ("TRCA") described in the Action Memorandum. The actions to be implemented include, but are not limited to, the following:

Stabilizing waste pond 1 and waste pond 2 on the Site property to temporarily abate the ongoing release of material containing hazardous substances from the waste ponds to the San Jacinto River and installing fencing and taking other steps to secure and limit the potential for unauthorized access to the Tract.

45. Conceptual Design, Work Plan, and Implementation.
 - a. Within 14 days of the Effective Date, Respondents shall develop the conceptual design on all removal options that address the "Imminent and Substantial Endangerment" finding and performance measures outlined in the Time Critical Removal Action Memorandum dated April, 2, 2010 (Action Memo). Respondents shall prepare a technical memorandum that documents all alternatives evaluated and provides a recommended option. Each alternative

listed in the technical memo will provide an analysis of the environmental effectiveness, cost, and implementability. EPA will review the technical memorandum and issue a decision document (titled "EPA's Approval of Preferred Alternative Memo") approving the preferred alternative that best addresses the performance measures outlined in the Action Memo.

- b. Within 30 days after the issuance of EPA's Approval of Preferred Alternative Memo, Respondents shall submit to EPA for approval a draft Work Plan for performing the removal action generally described in Paragraph 44 above. The draft Work Plan shall provide a description of, and an expeditious schedule for, the actions required by this Settlement Agreement. EPA shall require preparation of a Quality Assurance Project Plan ("QAPP") as part of the Work Plan. The QAPP should be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001), and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998). Respondents may elect to rely upon the QAPP submitted to and approved by EPA under the UAO for RI/FS.
- c. EPA may approve, disapprove, require revisions to, or modify the draft Work Plan in whole or in part. If EPA requires revisions, Respondents shall submit a revised draft Work Plan within fourteen (14) days of receipt of EPA's notification of the required revisions. Respondents shall implement the Work Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.
- d. Respondents shall not commence any Work except in conformance with the terms of this Settlement Agreement. Respondents shall not commence implementation of the Work Plan developed hereunder until receiving written EPA approval pursuant to Paragraph 45(c).

- 46. Health and Safety Plan. Within 30 days after issuance of EPA's Approval of Preferred Alternative Memo, Respondents shall submit for EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-Site work under this Settlement Agreement. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondents shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the removal action.
- 47. Quality Assurance and Sampling.

- a. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures. Respondents shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate EPA guidance. Respondents shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondents shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001)," or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.
- b. Upon request by EPA, Respondents shall have such a laboratory analyze samples submitted by EPA for QA monitoring. Respondents shall provide to EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.
- c. Upon request by EPA, Respondents shall allow EPA or its authorized representatives to take split and/or duplicate samples. Respondents shall notify EPA not less than fourteen (14) days in advance of any sample collection activity, unless shorter notice is agreed to by EPA. EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Respondents to take split or duplicate samples of any samples it takes as part of its oversight of Respondents' implementation of the Work.

48. Post-Removal Site Control. In accordance with the Work Plan schedule, or as otherwise directed by EPA, Respondents shall submit a proposal for post-removal site control consistent with Section 300.415(I) of the NCP and OSWER Directive No. 9360.2-02. Upon EPA approval, Respondents shall implement such controls and shall provide EPA with documentation of all post-removal site control arrangements.

49. Reporting.

- a. Respondents shall submit a weekly written progress report to EPA concerning actions undertaken pursuant to this Settlement Agreement every Monday after the date of receipt of EPA's approval of the Work Plan until termination of this Settlement Agreement, unless otherwise directed in writing by the OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data

received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

- b. Respondents shall submit five (5) copies of all plans, reports or other submissions required by this Settlement Agreement, the Statement of Work, or any approved work plan. Upon request by EPA, Respondents shall submit such documents in electronic form.
- c. Respondents who own or control property at the Site shall, at least thirty (30) days prior to the conveyance of any interest in real property at the Site, give written notice to the transferee that the property is subject to this Settlement Agreement and written notice to EPA and the State of the proposed conveyance, including the name and address of the transferee. Respondents who own or control property at the Site also agree to require that their successors comply with the immediately proceeding sentence and Sections IX (Site Access) and X (Access to Information).

50. Final Report. Within sixty (60) days after completion of all Work required by this Settlement Agreement, Respondents shall submit for EPA review and approval a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports" and the "Superfund Removal Procedures: Removal Response Reporting – POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994). The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Settlement Agreement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

51. Off-Site Shipments.

- a. Respondents shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to the On-Scene Coordinator. However, this

notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

- i. Respondents shall include in the written notification the following information: 1) the name and location of the facility to which the Waste Material is to be shipped; 2) the type and quantity of the Waste Material to be shipped; 3) the expected schedule for the shipment of the Waste Material; and 4) the method of transportation. Respondents shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.
 - ii. The identity of the receiving facility and state will be determined by Respondents following the award of the contract for the removal action. Respondents shall provide the information required by Paragraph 51(a) and 51(b) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.
- b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondents shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

IX. SITE ACCESS

52. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by any of the Respondents, such Respondents shall, commencing on the Effective Date, provide EPA, and its representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.
53. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall use their best efforts to obtain all necessary access agreements within fifteen (15) days after the Effective Date, or as otherwise specified in writing by the OSC. Respondents shall immediately notify EPA if after using their best efforts they are unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondents shall describe in writing their efforts to obtain access. EPA may then assist Respondents in gaining access, to the extent necessary to effectuate the response actions described in this Settlement Agreement, using such means as EPA deems appropriate. Respondents shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XV (Payment of Response Costs).

54. Notwithstanding any provision of this Settlement Agreement, EPA retains all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

X. ACCESS TO INFORMATION

55. Respondents shall provide to EPA, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.
56. Respondents may assert business confidentiality claims covering part or all of the documents or information submitted to EPA and the State under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA and the State, or if EPA has notified Respondents that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondents.
57. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondents assert such a privilege in lieu of providing documents, they shall provide EPA and the State with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.
58. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XI. RECORD RETENTION

59. Until ten (10) years after Respondents' receipt of EPA's notification pursuant to Section XXIX (Notice of Completion of Work), each Respondent shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until ten (10) years after Respondents' receipt of EPA's notification pursuant to Section XXIX (Notice of Completion of Work), Respondents shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to performance of the Work.
60. At the conclusion of this document retention period, Respondents shall notify EPA and the State at least ninety (90) days prior to the destruction of any such records or documents, and, upon request by EPA or the State, Respondents shall deliver any such records or documents to EPA or the State. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondents assert such a privilege, they shall provide EPA or the State with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or information; and 6) the privilege asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.
61. Each Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XII. COMPLIANCE WITH OTHER LAWS

62. Respondents shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable state and federal laws and regulations except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 6921(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-Site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental

or facility siting laws. Respondents shall identify ARARs in the Work Plan subject to EPA approval.

XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

63. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action. Respondents shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondents shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer, Emergency Planning and Response Branch, EPA Region 6, 214-665-3166, and the EPA Regional Emergency 24-hour telephone number, 1-866-372-7745, of the incident or Site conditions. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondents shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XV (Payment of Future Response Costs).
64. In addition, in the event of any release of a hazardous substance from the Site, as referenced in Paragraph 63, Respondents shall immediately notify the OSC at 1-866-372-7745 and the National Response Center at (800) 424-8802. Respondents shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

XIV. AUTHORITY OF ON-SCENE COORDINATOR

65. The OSC shall be responsible for overseeing Respondents' implementation of this Settlement Agreement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of Work unless specifically directed by the OSC.

XV. PAYMENT OF FUTURE RESPONSE COSTS

66. Payments for Future Response Costs.
- a. Respondents shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondents a bill requiring payment that includes a SCORPIOS report, which includes direct and indirect costs incurred

by EPA and its contractors. Also, Respondents shall make all payments within thirty (30) days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 68 of this Settlement Agreement. Respondents may request EPA to provide a full cost package. Such request for a full cost package must be made within twenty (20) days of Respondents' receipt of the bill, and in such case, Respondents shall have thirty (30) additional days after receipt for the full cost package. EPA's costs in generating and providing the full cost package to the Respondents is a Future Response Cost and is subject to reimbursement per this Settlement Agreement.

- b. Respondents shall make all payments required by this Paragraph by Electronic Funds Transfer ("EFT") in accordance with current EFT procedures to be provided to Respondents by EPA Region 6, and shall be accompanied by a statement identifying the name and address of the parties making payment, the Site name, the EPA Region and Site/Spill ID Number 06ZQ, and the EPA docket number for this action.

- c. At the time of payment, Respondents shall send notice that payment has been made to by email to acctsreceivable.cinwd@epa.gov, and to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

And to:

Chief, Enforcement Assessment Section
1445 Ross Avenue (6SF-TE)
Dallas, TX 75202-2733

- d. The total amount to be paid by Respondents pursuant to Paragraph 66(a) shall be deposited by EPA in the San Jacinto River Waste Pits Superfund Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

- 67. In the event that the payments for Future Response Costs are not made within 30 days of Respondents' receipt of a bill or within thirty (30) days of receipt of the full cost package when the full cost package request has been made in accordance with Paragraph 66(a), Respondents shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII.

68. Respondents may contest payment of any Future Response Costs billed under Paragraph 66 if they determine that EPA has made a mathematical error, or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within thirty (30) days of receipt of the bill or thirty (30) days of receipt of the full cost package when such request is made in accordance with Paragraph 66(a) above and must be sent to the OSC. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondents shall within the 30-day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 66. Simultaneously, Respondents shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of Texas and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the EPA OSC a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondents shall initiate the Dispute Resolution procedures in Section XVI (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 66. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 66. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVI (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs.

XVI. DISPUTE RESOLUTION

69. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.
70. If Respondents object to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objection(s) within thirty (30) days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondents shall have fourteen (14) days from EPA's receipt of Respondents' written objection(s) to resolve the dispute through formal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA.
71. Any agreement reached by the parties pursuant to this Section shall be in writing and shall, upon signature by both parties, be incorporated into and become an enforceable part

of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA management official at the branch chief level or higher will issue a written decision on the dispute to Respondents. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondents' obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

XVII. FORCE MAJEURE

72. Respondents agree to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Respondents, or of any entity controlled by Respondents, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondents' best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work, increased cost of performance, or a failure to attain performance standards/action levels set forth in the Action Memorandum.
73. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondents shall notify EPA orally within five (5) days of when Respondents first knew that the event might cause a delay. Within five (5) days thereafter, Respondents shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondents' rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondents, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondents from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.
74. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondents in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will

notify Respondents in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. STIPULATED PENALTIES

75. Respondents shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 76 and 77 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XVII (*Force Majeure*). "Compliance" by Respondents shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

76. Stipulated Penalty Amounts - Work.

- a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 76(b):

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th day
\$2,500	15th through 30th day
\$5,000	31st day and beyond

b. Compliance Milestones

- (1) Conceptual Design of all Removal Actions Technical Memorandum
- (2) Draft Removal Action Work Plan
- (3) Draft Health & Safety Plan
- (4) Final Removal Action Work Plan
- (5) Final Health & Safety Plan
- (6) TCRA Implementation (start of on-site construction activities)
- (7) Removal Action Completion Report

77. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$250	1st through 14th day
\$500	15th through 30th day
\$1,000	31st day and beyond

78. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 88 of Section XX, Respondents shall be liable for a stipulated penalty in the amount of \$50,000.
79. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondents of any deficiency; and 2) with respect to a decision by the EPA Management Official at the branch chief level or higher, under Paragraph 71 of Section XVI (Dispute Resolution), during the period, if any, beginning on the twenty-first (21st) day after the Negotiation Period begins until the date that the EPA management official issues a final decision regarding such dispute. Nothing in this Settlement Agreement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.
80. Following EPA's determination that Respondents have failed to comply with a requirement of this Settlement Agreement, EPA may give Respondents written notification of the failure and describe the noncompliance. EPA may send Respondents a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondents of a violation.
81. All penalties accruing under this Section shall be due and payable to EPA within thirty (30) days of Respondents' receipt from EPA of a demand for payment of the penalties, unless Respondents invoke the dispute resolution procedures under Section XVI (Dispute Resolution). All payments to EPA under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund," shall be mailed to EPA Cincinnati Finance Office, 26 Martin Luther King Drive, Cincinnati, OH 45268, shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID Number 06WQ, the EPA Docket Number, and the name and address of the parties making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to EPA as provided in Paragraph 42.
82. The payment of penalties shall not alter in any way Respondents' obligation to complete performance of the Work required under this Settlement Agreement.
83. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until fifteen (15) days after the dispute is resolved by agreement or by receipt of EPA's decision. If Respondents prevail in the dispute resolution, the payment amount will be in accordance with the decision by the EPA official.
84. If Respondents fail to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondents shall pay Interest on the unpaid

balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 80. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(l) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 106(b) or 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Section, except in the case of a willful violation of this Settlement Agreement in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX, Paragraph 88. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XIX. COVENANT NOT TO SUE BY EPA

85. In consideration of the actions that will be performed and the payments that will be made by Respondents under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondents pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date of this Settlement Agreement. This covenant not to sue is conditioned upon the complete and satisfactory performance by Respondents of their obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XV. This covenant not to sue extends only to Respondents and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

86. Except as specifically provided in this Settlement Agreement, nothing in this Settlement Agreement shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Settlement Agreement shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law.
87. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondents to meet a requirement of this Settlement Agreement;
 - b. liability for costs not included within the definitions of Future Response Costs;
 - c. liability for performance of response action other than the Work;
 - d. criminal liability;
 - e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
 - f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
 - g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.
88. Work Takeover. In the event EPA determines that Respondents have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondents may invoke the procedures set forth in Section XVI (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by the United States in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondents shall pay pursuant to Section XV (Payment of Future Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANT NOT TO SUE BY RESPONDENTS

89. Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:
- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law; for the Work or Future Response Costs;
 - b. any claim for the Work or Future Response Costs, including any claim under the United States Constitution, the State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or Future Response Costs.

90. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).
91. Respondents agree not to seek judicial review of the final rule listing the Site on the NPL based on a claim that changed site conditions that resulted from the performance of the Work in any way affected the basis for listing the Site.

XXII. OTHER CLAIMS

92. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or EPA shall not be deemed a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement Agreement.
93. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.
94. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. CONTRIBUTION

95. a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2) and Section 122(h)(4), 42 U.S.C. § 9622(h)(4), and that each Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided for by law, for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.
- b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondents have, as of the Effective Date, resolved their liability to the United States for the Work and Future Response Costs.
- c. Nothing in this Settlement Agreement precludes the United States or Respondents from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not parties to this Settlement Agreement. Nothing in this Settlement Agreement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

XXIV. INDEMNIFICATION

96. Respondents shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondents agree to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondents in carrying out activities pursuant to this Settlement Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States.
97. The United States shall give Respondents notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondents prior to settling such claim.
98. Respondents waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondents shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXV. INSURANCE

99. At least fourteen (14) days prior to commencing any on-Site work under this Settlement Agreement, Respondents shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of \$2 million dollars, combined single limit, naming EPA as an additional insured. Within the same time period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Settlement Agreement. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then

Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

100. Within 30 days of the Effective Date, Respondents shall establish and maintain financial security for the benefit of EPA in the amount of \$1,500,000 in one or more of the following forms, in order to secure the full and final completion of Work by Respondents:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA;
- c. a trust fund administered by a trustee acceptable in all respects to EPA;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;
- e. a written guarantee to pay for or perform the Work provided by one or more parent companies of Respondents, or by one or more unrelated companies that have a substantial business relationship with at least one of Respondents; including a demonstration that any such guarantor company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or
- f. a demonstration of sufficient financial resources to pay for the Work made by one or more of Respondents, which shall consist of a demonstration that any such Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

101. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondents shall, within thirty (30) days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 100, above. In addition, if at any time EPA notifies Respondents that the anticipated cost of completing the Work has increased, then, within thirty (30) days of such notification, Respondents shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondents' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

102. If Respondents seek to ensure completion of the Work through a guarantee pursuant to Subparagraph 100(e) or 100(f) of this Settlement Agreement, Respondents shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date or such other date as agreed by EPA, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the dollar amount to be used in the relevant financial test calculations shall be the current cost estimate of \$1.5 million for the Work at the Site plus any other RCRA, CERCLA, TSCA, or other federal environmental obligations financially assured by the relevant Respondent or guarantor to EPA by means of passing a financial test.
103. If, after the Effective Date, Respondents can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 100 of this Section, Respondents may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondents shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondents may reduce the amount of security in accordance with EPA's written decision resolving the dispute.
104. Respondents may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondents may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. MODIFICATIONS

105. The OSC may make modifications to any plan or schedule or Statement of Work in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.
106. If Respondents seek permission to deviate from any approved work plan or schedule or Statement of Work, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondents may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 45(c).
107. No informal advice, guidance, suggestion, or comment by the OSC or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing

submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXVIII. NOTICE OF COMPLETION OF WORK

108. When EPA determines, after EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including post-removal site controls, payment of Future Response Costs, or record retention, EPA will provide written notice to Respondents. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the Work Plan if appropriate in order to correct such deficiencies. Respondents shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondents to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

XXIX. INTEGRATION/APPENDICES

109. This Settlement Agreement and its appendices constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:
- a. Appendix A is the Action Memorandum;
 - b. Appendix B is the List of Respondents;
 - c. Appendix C is the Site Map;
 - d. Appendix D is the Statement of Work.

XXX. NOTICES AND SUBMISSIONS

110. Whenever, under the terms of this Settlement Agreement, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notification as specified in this Section shall constitute complete satisfaction of any written notice requirement of this Settlement Agreement with respect to EPA and Respondents, respectively.

As to EPA: Valmichael Leos
EPA Project Coordinator (6SF-RA)
United States Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

As to Respondents: See persons to receive notice identified in Appendix B.

XXIX. EFFECTIVE DATE

111. This Settlement Agreement shall be effective five (5) days after the Settlement Agreement is signed by the Superfund Division Director or his delegate.

It is so ORDERED and Agreed this 11th day of May, 2010.

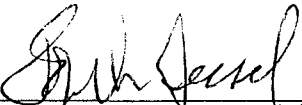
BY: Samuel Coleman DATE: 11 May 2010
Samuel Coleman, P.E.
Director
Superfund Division
Region 6
United States Environmental Protection Agency

EFFECTIVE DATE: May 17, 2010

The undersigned representative of Respondent certify that they are fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the parties they represent to this document in the matter of U. S. EPA, Region 6, Docket Number 06-12-10, relating to the San Jacinto River Waste Pits Superfund Site.

Agreed this 3rd day of May, 2010.

For Respondent: McGinnes Industrial Maintenance Corporation

By 

Title Vice President

The undersigned representative of Respondent certify that they are fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the parties they represent to this document in the matter of U. S. EPA, Region 6, Docket Number 06-12-10, relating to the San Jacinto River Waste Pits Superfund Site.

Agreed this 7th day of May, 2010.

For Respondent: International Paper Company

By David M. Kiser

Title Vice President

APPENDIX A
SAN JACINTO RIVER WASTE PITS
SUPERFUND SITE

ACTION MEMORANDUM






UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

APR 02 2010

MEMORANDUM

SUBJECT: Request for a Time Critical Removal Action at the San Jacinto River Waste Pits Site, Harris County, Texas

FROM: Valmichael Leos, Remedial Project Manager (RPM)
Remedial Branch, LA/NM/OK Section (6SF-RL) 

THRU: Charles Faultry, Associate Director
Remedial Branch (6SF-R) 
Mark Hansen, Associate Director
Prevention & Response Branch (6SF-P) 

TO: Samuel Coleman, P.E., Director
Superfund Division (6SF)

I. PURPOSE

This Memorandum requests approval of a Time Critical removal action in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9604, at the San Jacinto River Waste Pits site (the "site"). The Site is located east of the City of Houston between two unincorporated areas known as Channelview and as Highlands (Attachment 1). The removal action is to stabilize the site, temporarily abating the release of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (and possibly PCBs) into the waterway, until the site is fully characterized and a remedy is selected.

This action meets the criteria for initiating a removal action under Section 300.415 of the National Oil and Hazardous Substances Contingency Plan (NCP), 40 CFR § 300.415. This action is expected to require less than twelve months to complete.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID#: TXN000606611
Category of Removal: Time-Critical
Site ID#: 06ZQ
Latitude: 29.7944
Longitude: -95.0625



885143

A. Site Description

1. Removal Site Evaluation

In July 2005, seven samples were collected from the Tract of land located on the site for the U.S. Environmental Protection Agencies' (EPA's) Hazard Ranking System Documentation Record report (HRS Report). Each sample was found to contain a combination of the following chemicals, also known as, dioxin congeners. From these seven samples (USEPA UAO 2009), the highest detected concentration of each dioxin / furan congener include:

Congener	parts per trillion (PPT) or nanogram per kilogram (ng/kg)	Sample location
2,3,7,8-Tetrachlorodibenzo-p-dioxin	18,500	SE-08
1,2,3,7,8-Pentachlorodibenzodioxin	363	SE-09
1,2,3,4,7,8-Hexachlorodibenzodioxin	4.83	SE-09
1,2,3,6,7,8-Hexachlorodibenzodioxin	28	SE-09
1,2,3,7,8,9-Hexachlorodibenzodioxin	10	SE-09
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	658	SE-09
2,3,7,8-Tetrachlorodibenzofuran	41,300	SE-08
1,2,3,7,8-Pentachlorodibenzofuran	3,770	SE-IO
2,3,4,7,8-Pentachlorodibenzofuran	2,330	SE-IO
1,2,3,4,7,8-Hexachlorodibenzofuran	8,660	SE-IO
1,2,3,6,7,8-Hexachlorodibenzofuran	2,290	SE-IO
2,3,4,6,7,8-Hexachlorodibenzofuran	349	SE-IO
1,2,3,7,8,9-Hexachlorodibenzofuran	656	SE-IO
1,2,3,4,6,7,8-Heptachlorodibenzofuran	2,360	SE-IO
1,2,3,4,7,8,9-Heptachlorodibenzofuran	878	SE-IO

A recent site visit by EPA Remedial Project Managers Leos and Tzhone on Monday March 1, 2010, documented grayish waste entering the San Jacinto River along the Northwest corner of the site from waste pond 1 (Attachment 3). In addition, 95% of Waste pond #2 was observed to be under four feet of water. Waste pond 2 consisting of two surface impoundments is continually inundated by the San Jacinto River and contaminated sediment within the source area and is in direct contact with the river water as documented in the December 1987, December 1989, February 1992, April 1998, June 1999, May 2002, February 2003, and April 2005 aerial photographs of the Tract (Attachment 6).

There is no containment to prevent the migration of hazardous substances from the waste ponds into the San Jacinto River. Chemical analysis confirms that dioxin and dibenzofuran contaminants are entering the San Jacinto River. Chemical analysis documented the presence of numerous dioxin congeners in the source sediments. In addition, sediment samples collected within the surface waste ponds indicate that concentrations of hazardous substances are present at levels significantly greater than upstream and downstream background levels and in concentrations greater than the corresponding by Contract-Required Quantitation Levels.

2. Physical Location

The Site, as indicated in Attachment 1, is in Harris County in the State of Texas. The Site itself has no specific street address. The Site is comprised of an area of land with a set of two waste ponds with three surface impoundments built in the 1960s for disposal of pulp and paper mill wastes. The site is located on a 20-acre parcel on the western bank of the San Jacinto River, in Harris County, Texas, immediately north of the Interstate Highway 10 (I-10) bridge over the San Jacinto River. Prior to 1965, the two waste ponds were built by constructing berms within the estuarine marsh just north of what was then Texas State Highway 73 and is now I-10, west of the main river channel east of the City of Houston between two unincorporated areas known as Channelview and Highlands.

3. Site Characteristics

The Site consists of two waste ponds consisting of three surface impoundments containing hazardous substances partially submerged in the San Jacinto River as well as locations those hazardous substances have been deposited, placed, or otherwise come to be located. Aerial photographs as early as the 1970s indicate the Tract inundated by the San Jacinto River. The ponds at the Site are connected with a drain line to allow flow of excess water (including rain water) from Pond #1 on the western side, to Pond #2 on the eastern side. Both ponds were used as a waste disposal area and waste was pumped into the impoundments from the barge as a slurry (Attachment 2). The outer edges of the eastern pond collected the effluent from the western impoundment where it was transported back to the Champion paper mill in Pasadena, Texas, where is passed through subsequent settling ponds. There is evidence of a secondary impoundment in the eastern pond that may have been associated with the drain line between the two waste ponds.

The waste paper sludge was placed in the two ponds on the Tract. Waste pond 1 is located on the western portion of the Tract totaling 132,386 square feet. Waste pond 2 which consists of two surface impoundments are on the eastern portion of the Tract totaling 46,182 square feet and 188,641 square feet respectively. Currently, the Tract is inactive and approximately half of the Tract's surface area, including the abandoned waste disposal ponds, is now submerged below the adjacent San Jacinto River's water surface.

The primary hazardous substances documented at the Site are polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. Dioxin concentrations as high as 41,300 parts per trillion have been found in sediment samples collected from the Tract's disposal pond areas and from river sediments near the Tract. Sediments contaminated with high levels of dioxin have been found in the San Jacinto River both upstream and downstream from the Tract due to tidal influences.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans have been detected in sediment and surface water at the site. Dioxins and furans are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. §9601(14).

5. NPL Status

The Site was proposed for listing on the National Priorities List ("NPL") on September 19, 2007 (72 FR53509), and was placed on the NPL effective March 19, 2008 (73 FR 14719).

6. Maps, pictures and other graphic representations

Attachment 1 Current Site Location

Attachment 2 Site Map with Waste Pits 1 and 2

Attachment 3 Site photos of waste entering San Jacinto River dated 03/01/2010

Attachment 4 ATSDR Fact Sheets on Dioxins/Furans

Attachment 5 Enforcement Addendum (Enforcement Confidential/FOIA Exempt)

Attachment 6 Historical Aerial photos of site

Attachment 7 1966 Datum Map with original impoundments line superimposed

B. Other Actions to Date

1. Previous Actions

On December 27, 1965, the Harris County Health Department ("HCHD") observed liquid waste being pumped out of a pond at the Tract directly into the San Jacinto River. On December 28, 1965, the HCHD sent a letter to MIMC and Champion ordering them to stop discharging "black liquor" from the waste ponds into the San Jacinto River. In addition, the HCHD demanded that the levees surrounding the wastes ponds be repaired.

A December 30, 1965 internal Champion memo confirmed that water seepage was occurring along the waste ponds' levees and two sections of the levee around the western waste pond.

In May 1966, the Texas Department of Health ("TDH") investigated Champion Paper's waste disposal practices. The TDH noted seepage on the western waste pond and needed improvements on the eastern waste ponds because it had never been properly completed even though waste was being stored near capacity within its confines. In addition, the TDH noted that storm events had the potential to cover the disposal area with water and wash out the levees.

On July 29, 1966, the Texas Water Pollution Control Board ("TWPCB") granted MIMC permission to release a combination of stabilized waste water and rain water from the waste ponds into the San Jacinto River. The TWPCB noted that the waste ponds would no longer be used for the storage of waste material.

The City of Houston conducted a toxicity study of the Houston Ship Channel including the San Jacinto River published in July 1995. Samples of sediment and fish and crab samples were collected in August 1993 and May 1994 for the study. Sediment samples collected northeast of the Tract indicated extremely high dioxin and furan levels. These dioxin and furan levels were the highest values recorded in the entire Houston Ship Channel. In addition, fish and crab samples collected northeast of the Tract and 1 mile downstream from the Tract also indicated extremely high levels of dioxins and dibenzofurans.

In January 2004, the Texas Commission on Environmental Quality ("TCEQ") published a study of the Total Maximum Daily Loads ("TMDLs") for Dioxins in the Houston Ship Channel. Samples of sediment and fish tissue were collected in summer 2002, fall 2002, and spring 2003. The data collected indicated the continued presence of dioxin contamination in the San Jacinto River surrounding the Tract. In addition, the fish and shellfish tissue samples collected indicated that the health-based standard was exceeded in 97% of fish samples and in 95% of the crab samples. Additional samples in the San Jacinto River surrounding the Tract were collected in spring 2004 and confirmed the high dioxin concentrations.

On April 14, 2005, the Texas Parks & Wildlife Department ("TPWD") referred the area consisting of the Tract to the U.S. EPA for evaluation under the Hazardous Ranking System as a potential Superfund site. The TPWD submitted a 1982 topographic map and aerial photographs of the Tract indicating much of the land area has been submerged due to subsidence. In addition, the TPWD cited the Houston Ship Channel Toxicity Study and the TMDLs for Dioxins in the San Jacinto River as indication that there was a risk that needed to be addressed at the Tract due to the unusually high dioxin readings collected northeast of the Tract as well as downstream from the Tract.

2. Current Actions

On July 17, 2009, EPA sent a Special Notice Letter to the Respondents offering them an opportunity to negotiate and enter into an Administrative Order on Consent ("AOC") covering the performance of the Remedial Investigation and Feasibility Study (RI/FS) of the Site. However, EPA never received a Good Faith Offer to perform the RI/FS for the Site.

On November 20, 2009, EPA issued a Unilateral Administrative Order (UAO) to International Paper Company, Inc. and McGinnes Industrial Maintenance Corporation to conduct a RI/FS to study the nature and extent of contamination at the site.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

In August 2009, the TCEQ conducted environmental sampling to evaluate releases from the pits into surface water and sediments at the site. A final report will be available for review in the 3rd fiscal quarter of 2010.

2. Potential for State/local Response

The TCEQ, Harris County, along with other federal stakeholders (i.e. US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration) will provide technical assistance to the EPA during oversight of this removal action.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Section 300.415 of the NCP lists the factors to be considered in determining the appropriateness of a removal action. Paragraphs (b)(2)(i), (iii), (iv), and (v) directly apply to the conditions at the site. Any one of these factors may be sufficient to justify a removal action.

1. Exposure to Human Populations, Animals or the Food Chain, NCP Section 300.415.(b)(2)(i)

There is potential for exposure of human populations and animals to dibenzo-p-dioxins and polychlorinated dibenzofurans, which are hazardous substances as defined in CERCLA Section 101(14), 42 U.S.C. 9601(14), and further defined at 40 CFR § 302.4. A release of these contaminants from both waste ponds has been identified through site assessment activities conducted by EPA and TCEQ in 2006, and there is a threat of further release. Site assessment activities included surface water and sediment sampling for the presence of dioxins and furans. People and animals coming on to the site could be exposed to these contaminants through ingestion, skin contact and inhalation pathways. In addition, during a recent site visit conducted on March 1, 2010, by RPMs Leos and Tzhone, releases of hazardous substances were observed entering the San Jacinto River from both Waste ponds #1 and #2.

Routes of exposure include, but are not limited to: human direct dermal contact with contaminated sediment or water; human ingestion of contaminated sediment or water; human inhalation of contaminated sediment or water; human direct dermal contact with contaminated ecological receptors; human ingestion of contaminated ecological receptors; and ecological bioaccumulation of contaminants at every level of the food web.

Both human and ecological health is threatened by releases of hazardous substances from the Tract. Humans trespass on and around the site to capture ecological receptors for sport and subsistence. Ecological receptors include, but are not limited to: fish, birds, mammals, amphibians, reptiles, macro-invertebrates, micro-invertebrates, and plants. Ecological health is also threatened by bioaccumulation of hazardous substances released from the north tract/source area at every level of the food chain.

Dioxins from natural and anthropogenic (man-made) sources have been widely distributed throughout the environment. Almost every living creature has been exposed to

dioxins. Studies have shown that exposure to dioxins at high enough doses may cause a number of adverse health effects.

The most common health effect in people exposed to large amounts of dioxins, in particular 2,3,7,8- Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), is chloracne. Chloracne cases have typically been the result of accidents or significant contamination events. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face and upper body. Other skin effects noted in people exposed to high doses of 2,3,7,8-TCDD include skin rashes, discoloration, and excessive body hair. Changes in blood and urine that may indicate liver damage also are seen in people. Exposure to high concentrations of CDDs may induce long-term alterations in glucose metabolism and subtle changes in hormone levels.

In certain animal species, 2,3,7,8-TCDD is especially harmful and can cause death after a single exposure. Exposure to lower levels can cause a variety of effects in animals, such as weight loss, liver damage, and disruption of the endocrine system. In many species of animals, 2,3,7,8-TCDD weakens the immune system and causes a decrease in the system's ability to fight bacteria and viruses. In other animal studies, exposure to 2,3,7,8-TCDD has caused reproductive damage and birth defects. Some animal species exposed to TCDDs during pregnancy had miscarriages and the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy often had severe birth defects including skeletal deformities, kidney defects, and weakened immune responses. Several studies suggest that exposure to 2,3,7,8-TCDD increases the risk of several types of cancer in people. Animal studies have also shown an increased risk of cancer from exposure to 2,3,7,8-TCDD.

The U.S. Department of Health and Human Services has determined that 2,3,7,8-TCDD may reasonably be anticipated to cause cancer and the World Health Organization has determined that 2,3,7,8-TCDD is a human carcinogen. EPA has classified hexachlorodibenzo-p-dioxin as a probable human carcinogen (B2).

2. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release, NCP Section 300.415(b)(2)(iii)

Currently, the site consists of two waste ponds (Attachment 2) containing three surface impoundments. Waste pond #1 containing one of the surface impoundments is currently being eroded by the San Jacinto River and the contents of the ponds are being released into the waterway. Sampling of waste pond #1 confirms the presence of dibenzo-p-dioxins and polychlorinated dibenzofurans with concentrations ranging from 513 ng/kg to 23,300 ng/kg (WHO 2005). Waste pond #2 which contains two of the three surface impoundments and is located on the eastern site of the property is partly submerged under water and is releasing hazardous substances into the adjacent San Jacinto River. Sediment sampling in waste pond #2 has confirmed the presence of dibenzo-p-dioxins and polychlorinated dibenzofurans with concentrations ranging from 83 ng/kg to 34,000 ng/kg (WHO 2005).

3. **Contaminants in Soils, NCP Section 300.415.(b)(2)(iv)**

Dibenzo-p-dioxins and polychlorinated dibenzofurans are hazardous substances as defined in CERCLA Section 101(14), 42 U.S.C. § 9601(14), and further defined in 40 CFR § 302.4. Sample results indicated that dibenzo-p-dioxins and polychlorinated dibenzofurans contamination have exceeded 1,000 ng/kg in sediment samples collected from the impoundments as high as 34,000 ng/kg in waste pond #2 and as high as 23,300 ng/kg in waste pond #1.

4. **Weather Conditions That May Cause the Release or Migration of Hazardous Substances, NCP Section 300.415(b)(2)(v)**

The area receives an average of 50 inches of rain annually. The contaminants are subject to migration by entrainment, windblown deposition and surface runoff. The impoundments in waste ponds 1 and 2 may be affected by tides, winds, waves, and currents resulting from extreme weather conditions such as strong storm winds, flooding, tornadoes, and hurricanes which may cause a potential release or migration of dioxin and furan contaminated materials

B. **Threats to the Environment**

The levels of dibenzo-p-dioxins and polychlorinated dibenzofurans in sediment and surface water at this site in both waste ponds present a potential health problem to animal life that comes into contact with contaminated sediment and to freshwater aquatic life that receives runoff from this site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. **Proposed Actions**

1. **Proposed Action Description**

According to sediment and surface water samples taken by the TCEQ, EPA, and the University of Houston from 2005 through 2009 at the site, there are currently uncontrolled releases of dibenzo-p-dioxins and polychlorinated dibenzofurans into the San Jacinto River from Waste ponds #1 and #2. In addition to sampling data confirming releases from Waste ponds #1 and #2, a recent site inspection conducted in March 1, 2010, by Remedial Project Managers Leos and Tzhone has shown that there is visual evidence of grayish waste releasing into the San Jacinto River located in the Northwest corner of waste pond #1 (See Attachment 3). In addition, Waste pond #2 with its contaminated sediment, was observed to be under four feet of water and is continually releasing hazardous substances into the San Jacinto River.

The proposed action for this time critical removal involves the immediate design and construction of a physical protective barrier surrounding waste ponds 1 and 2 that address the release or threat of release of dibenzo-p-dioxins and polychlorinated dibenzofurans into the San Jacinto River. In addition to a physical protective barrier to keep the waste secure, there is currently unrestricted public access at the site. Public access restrictions must be put in place immediately following the approval of this action memorandum. The public access restrictions should involve placement of security fences and signs to prevent trespassing onto the property. The security fencing will prevent access of unauthorized persons into the entire area containing the waste impoundments.

Currently, there is not sufficient data available to fully characterize the nature and extent of contamination from waste ponds 1 and 2 (Attachment 2). Additional sediment and surface water samples need to be taken immediately for the design and construction of the protective barrier. A sampling plan will be prepared and implemented immediately following the approval of this action memorandum from which environmental sampling will occur along the perimeter of the referenced 1966 dike alignment shown in Attachment 7. Any concentrations greater than or equal to 330 ng / kg of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) organic carbon normalized (or 4.5 ng / kg TCDD non-organic carbon normalized) in the sediment will be considered part of the source area of contamination within the original 1966 berm placement as shown in Attachment 7 that must be addressed with the protective barrier. Any concentrations of less than 330 ng / kg of TCDD organic carbon normalized (or 4.5 ng / kg TCDD non-organic carbon normalized) found in the sediment will be addressed in future non-time critical or remedial actions at the site.

The barrier design and construction must be structurally sufficient to withstand forces sustained by the river including any future erosion and be structurally sound for a number of years until a final remedy is designed and implemented. Also, the Houston area is visited by seasonal severe weather events (i.e. strong force winds or flooding) and the physical protective barrier must be structurally secure to withstand any potential future extreme weather events (i.e. Hurricane Ike of 2008).

All requirements under the OSHA of 1970, 29 U.S.C. § 651 et seq., and under the laws of a State with an approved equivalent worker safety program, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include, among other things, Hazardous Materials Operation, 20 CFR § 1910, as amended by 54 Fed. Reg. 9317 (March 1989), all OSHA General Industry (29 CFR § 1910) and Construction (29 CFR § 1926) standards wherever they are relevant, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR § 300 relating to the conduct of work at Superfund sites.

2. Contribution to Remedial Performance

Because this action constitutes source control, these actions are consistent with any long term remediation strategies that may be developed for the site.

3. Description of Alternative Technologies

Alternative technologies will be evaluated at a future date after the site stabilization and source control have been achieved.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

This removal action will be conducted to abate the actual or potential release of a hazardous substance, pollutant, or contaminant to the environment, in accordance with CERCLA, 42 U.S.C. § 9601 *et seq.*, and in a manner consistent with the National Contingency Plan, 40 CFR § 300, as required in 33 U.S.C. § 1321(c)(3) and 42 U.S.C. § 9604 (a)(1). As stated in 40 CFR § 300.415(j), fund-financed removal actions under CERCLA Section 104 and removal actions under CERCLA Section 106 shall, to the extent practicable considering the exigencies of the situation, attain the ARARs under Federal environmental law. ARARs are set forth in the TSCA codified in 40 CFR § 700 for the disposal, cleanup and verification sampling of PCBs spills.

The RCRA waste analysis requirements found in 40 CFR § 261.20 and 261.30, RCRA's manifesting requirements found in 40 CFR § 262.20, and RCRA packaging and labeling requirements found in 40 CFR § 262.30 are ARARs for this removal action. Because onsite storage of hazardous wastes will not exceed ninety days, specific storage requirements found in 40 CFR § 265 are not ARARs. *See* 40 CFR § 262.34.

5. Project Schedule

After the Action Memorandum is signed, it is anticipated that the additional sampling for design along with the construction will commence within 60 days. Onsite construction will take approximately 90 to 120 days to complete. Total project length will be approximately 180 days.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The proposed actions for the San Jacinto River Waste Pits site should be taken immediately. Should these actions be delayed, the potential threats to human health and the environment will increase. A substantial amount of the dibenzo-p-dioxins and polychlorinated dibenzofurans waste will continue to release and spread into the San Jacinto River and unrestricted access to the area will continue to threaten nearby human populations.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

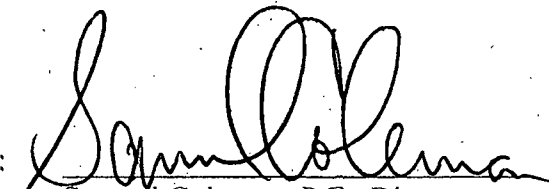
See attached confidential Enforcement Attachment (*See* Attachment 5).

IX. RECOMMENDATION

This decision document represents the selected removal action for the San Jacinto River Waste Pits site near Houston, Harris County, Texas, is developed in accordance with CERCLA, 42 U.S.C. § 9601 et seq., and consistent with the NCP, 40 CFR § 300. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action. No funding will come from the Regional removal allowance for this proposed action.

Approved:


Samuel Coleman, P.E., Director
Superfund Division

Date:

2 April 2010

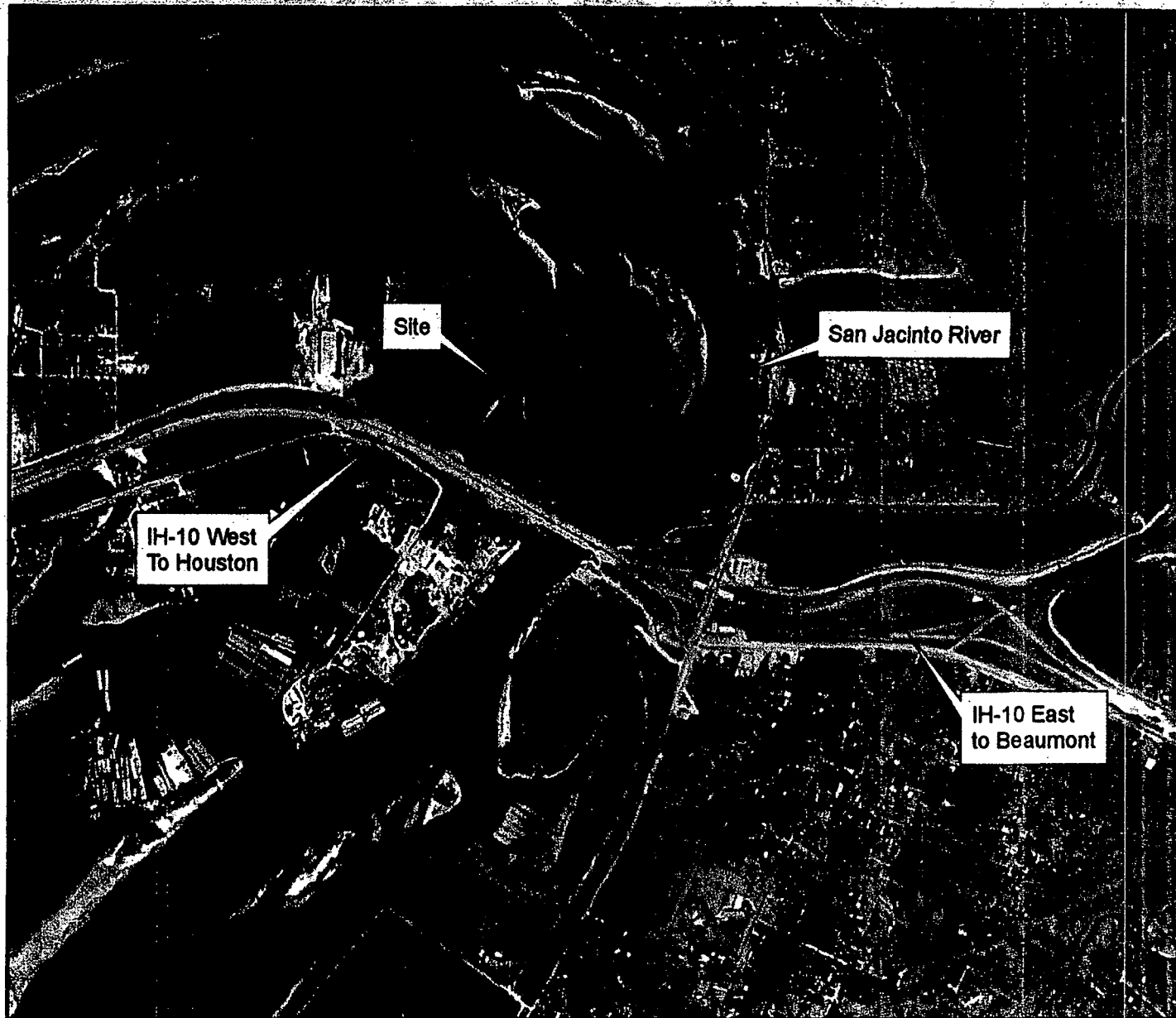
Attachments

Reference List

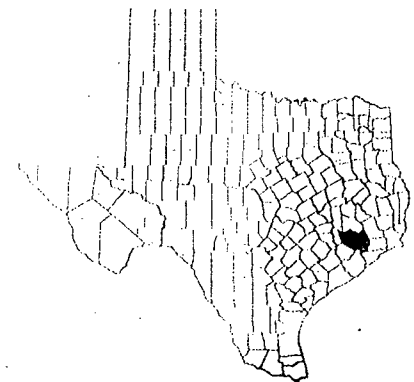
- U.S. EPA. 2009. *Unilateral Administrative Order for Remedial Investigation / Feasibility Study*. U.S. EPA Region 6. CERCLA Docket No. 06-03-10
- TCEQ and U.S. EPA. 2006. *Screening Site Assessment Report San Jacinto River Waste Pits, Channelview, Harris County, Texas*. TXN000606611. Texas Commission on Environmental Quality and U.S. Environmental Protection Agency.
- University of Houston and Parsons. 2006. *Total maximum daily loads for dioxins in the Houston Ship Channel*. Contract No. 582-6-70860, Work Order No. 582-6-70860-02. Quarterly report No. 3., Prepared in cooperation with the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency. University of Houston and Parsons Water & Infrastructure.
<http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/26hscdioxin/26-all-data-compiled-q3-fy06.pdf>.
- Weston. 2006. *Draft Field Activities Report for Sediment Sampling*. San Jacinto River Bridge Dolphin Project IH-10 at the San Jacinto River. Prepared for the Texas Department of Transportation, Environmental Affairs Division, Austin, TX. Weston Soutions, Inc., Houston, Texas.

Attachment 1
Current Site Location

Figure 1 - Site Location Map

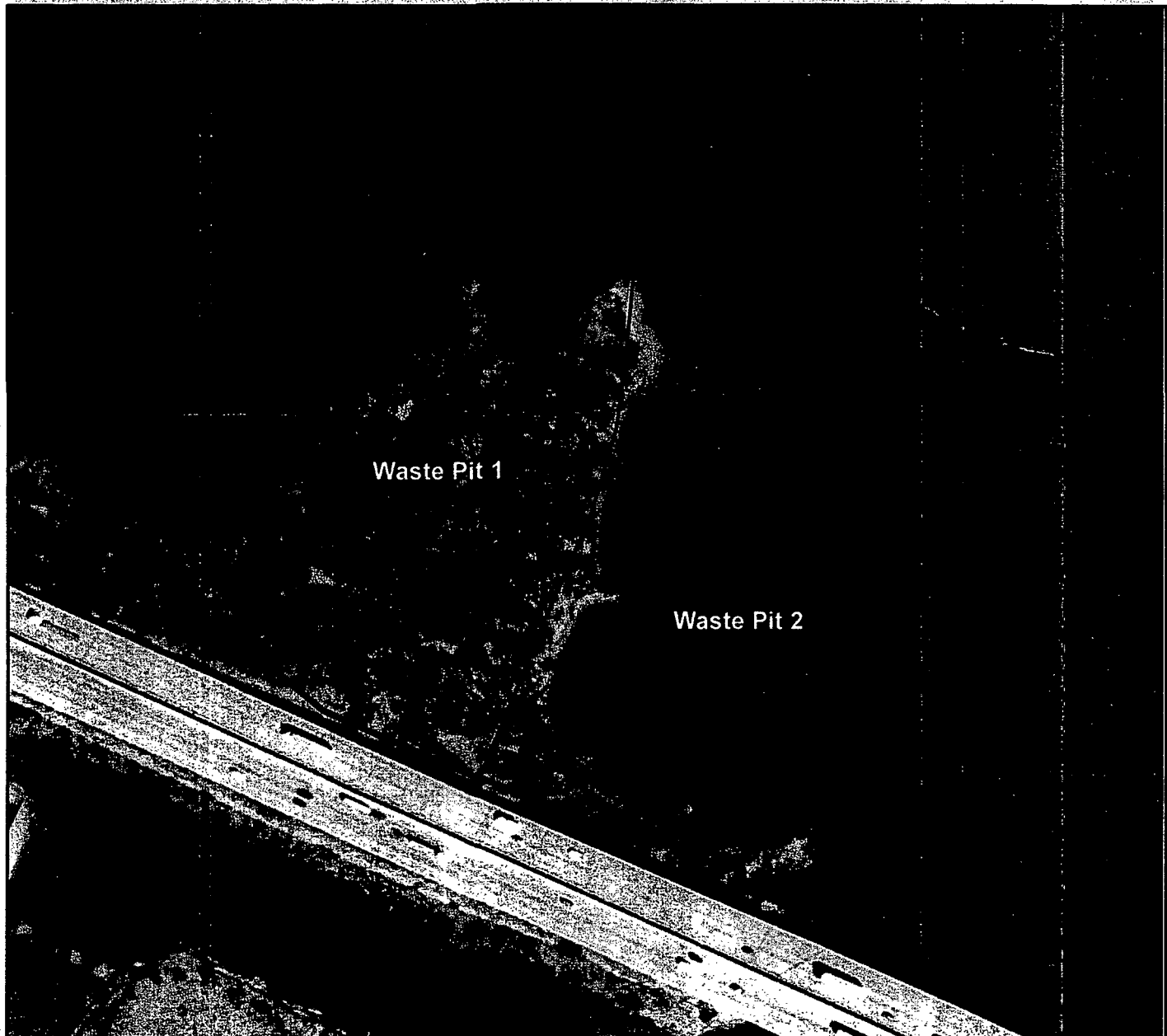


SOURCE - The base data used are the Highlands Digital Orthoquarter Quadrangles (DOQQs), which are digital versions of aerial photographs. This DOQQ was produced by the TCEQ using USGS guidelines. NAD 83 UTM Zone 15.




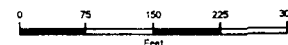
Attachment 2

Site Map with Waste Pits 1 and 2



San Jacinto River Waste Pits

 1966 Original Perimeter
of Impoundments



Sources:
Aerial Photo: Digital Globe, 2007.
Impoundment Boundaries: Created by
EPA Region 6 using 1966 aerial photo from USGS.

EPA makes no claims as to the
accuracy of the data or its suitability
for any particular use.

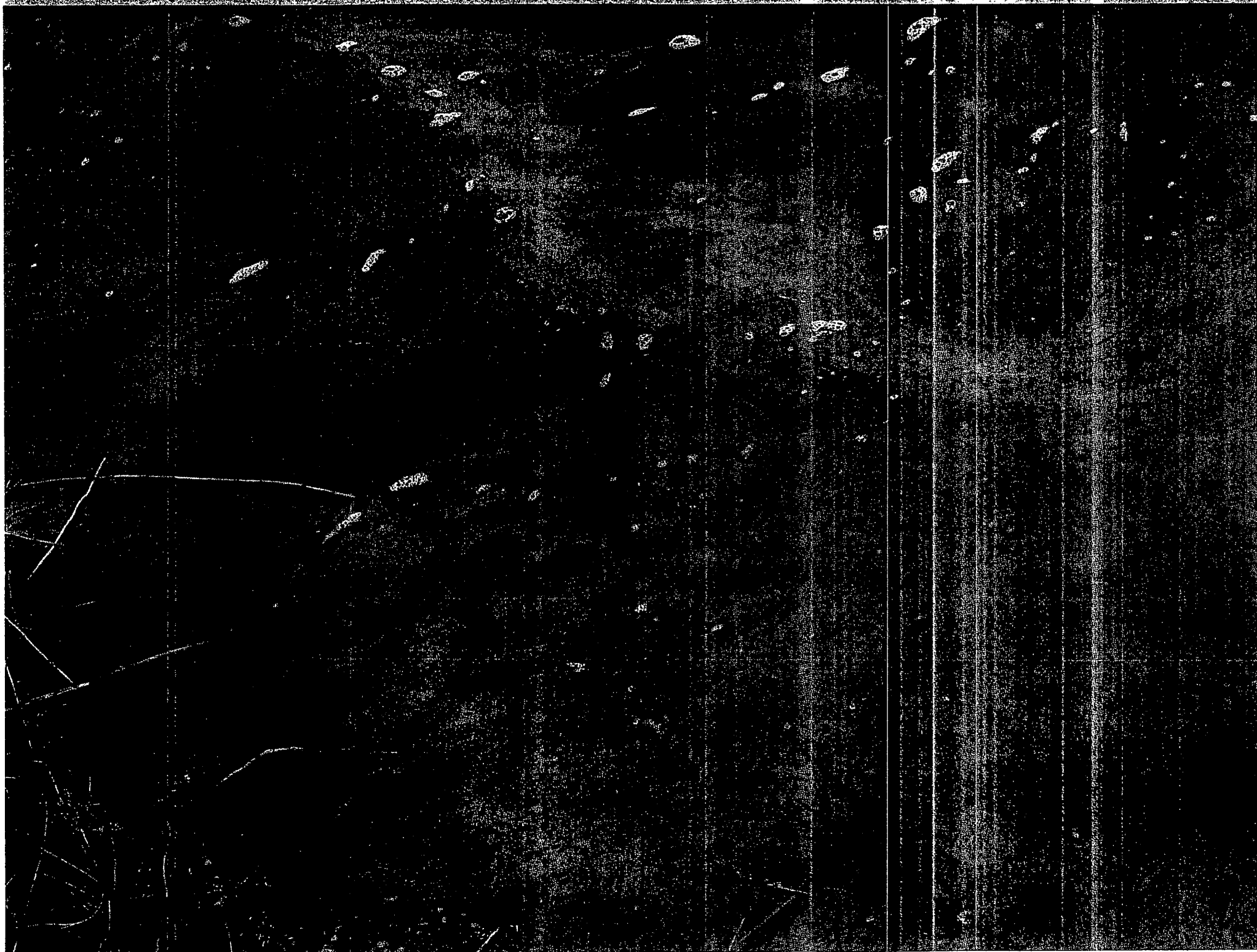
Map created: March 17, 2010



EPA Region 6
GIS Support Team
Dallas, Texas
20100317N.02

Attachment 3

Site photos of waste entering San Jacinto River dated 03/01/2010



Attachment 4

ATSDR Fact Sheets on Dioxins/Furans

This fact sheet answers the most frequently asked health questions (FAQs) about dibenzo-p-dioxins. For more information, call the ATSDR Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because these substances may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to chlorinated dibenzo-p-dioxins (CDDs) (75 chemicals) occurs mainly from eating food that contains the chemicals. One chemical in this group, 2,3,7,8-tetrachlorodibenzo-p-dioxin or 2,3,7,8-TCDD, has been shown to be very toxic in animal studies. It causes effects on the skin and may cause cancer in people. This chemical has been found in at least 91 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are CDDs?

CDDs are a family of 75 chemically related compounds commonly known as chlorinated dioxins. One of these compounds is called 2,3,7,8-TCDD. It is one of the most toxic of the CDDs and is the one most studied.

In the pure form, CDDs are crystals or colorless solids. CDDs enter the environment as mixtures containing a number of individual components. 2,3,7,8-TCDD is odorless and the odors of the other CDDs are not known.

CDDs are not intentionally manufactured by industry except for research purposes. They (mainly 2,3,7,8-TCDD) may be formed during the chlorine bleaching process at pulp and paper mills. CDDs are also formed during chlorination by waste and drinking water treatment plants. They can occur as contaminants in the manufacture of certain organic chemicals. CDDs are released into the air in emissions from municipal solid waste and industrial incinerators.

What happens to CDDs when they enter the environment?

- ☐ When released into the air, some CDDs may be transported long distances, even around the globe.
- ☐ When released in waste waters, some CDDs are broken down by sunlight, some evaporate to air, but most attach to soil and settle to the bottom sediment in water.
- ☐ CDD concentrations may build up in the food chain, resulting in measurable levels in animals.

How might I be exposed to CDDs?

- ☐ Eating food, primarily meat, dairy products, and fish, makes up more than 90% of the intake of CDDs for the general population.
- ☐ Breathing low levels in air and drinking low levels in water.
- ☐ Skin contact with certain pesticides and herbicides.
- ☐ Living near an uncontrolled hazardous waste site containing CDDs or incinerators releasing CDDs.
- ☐ Working in industries involved in producing certain pesticides containing CDDs as impurities, working at paper and pulp mills, or operating incinerators.

How can CDDs affect my health?

The most noted health effect in people exposed to large amounts of 2,3,7,8-TCDD is chloracne. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face and upper body. Other skin effects noted in people exposed to high doses of 2,3,7,8-TCDD include skin rashes, discoloration, and excessive body hair. Changes in blood and urine that may indicate liver damage also are seen in people. Exposure to high concentrations of CDDs may induce longterm alterations in glucose metabolism and subtle changes in hormonal levels.

In certain animal species, 2,3,7,8-TCDD is especially harmful and can cause death after a single exposure. Exposure to lower levels can cause a variety of effects in

ToxFAQsTM Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>

animals, such as weight loss, liver damage, and disruption of the endocrine system. In many species of animals, 2,3,7,8-TCDD weakens the immune system and causes a decrease in the system's ability to fight bacteria and viruses. In other animal studies, exposure to 2,3,7,8-TCDD has caused reproductive damage and birth defects. Some animal species exposed to CDDs during pregnancy had miscarriages and the offspring of animals exposed to 2,3,7,8-TCDD during pregnancy often had severe birth defects including skeletal deformities, kidney defects, and weakened immune responses.

How likely are CDDs to cause cancer?

Several studies suggest that exposure to 2,3,7,8-TCDD increases the risk of several types of cancer in people. Animal studies have also shown an increased risk of cancer from exposure to 2,3,7,8-TCDD. The World Health Organization (WHO) has determined that 2,3,7,8-TCDD is a human carcinogen. The Department of Health and Human Services (DHHS) has determined that 2,3,7,8-TCDD may reasonably be anticipated to cause cancer.

How can CDDs affect children?

Very few studies have looked at the effects of CDDs on children. Chloracne has been seen in children exposed to high levels of CDDs. We don't know if CDDs affect the ability of people to have children or if it causes birth defects, but given the effects observed in animal studies, this cannot be ruled out.

How can families reduce the risk of exposure to CDDs?

- ☐ Children should avoid playing in soils near uncontrolled hazardous waste sites.
- ☐ Discourage children from eating dirt or putting toys or other objects in their mouths.

☐ Everyone should wash hands frequently if playing or working near uncontrolled hazardous waste sites.

☐ For new mothers and young children, restrict eating foods from the proximity of uncontrolled sites with known CDDs.

☐ Children and adults should eat a balanced diet preferably containing low to moderate amounts of animal fats including meat and dairy products, and fish that contain lower amounts of CDDs and eat larger amounts of fruits, vegetables, and grains.

Is there a medical test to determine whether I've been exposed to CDDs?

Tests are available to measure CDD levels in body fat, blood, and breast milk, but these tests are not routinely available. Most people have low levels of CDDs in their body fat and blood, and levels considerably above these levels indicate past exposure to above-normal levels of 2,3,7,8-TCDD. Although CDDs stay in body fat for a long time, tests cannot be used to determine when exposure occurred.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.00003 micrograms of 2,3,7,8-TCDD per liter of drinking water (0.00003 µg/L). Discharges, spills, or accidental releases of 1 pound or more of 2,3,7,8-TCDD must be reported to EPA. The Food and Drug Administration (FDA) recommends against eating fish and shellfish with levels of 2,3,7,8-TCDD greater than 50 parts per trillion (50 ppt).

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1998. Toxicological Profile for Chlorinated Dibenzo-p-Dioxins. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-62, Atlanta, GA 30333. Phone: 1-800-232-4636, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.



Attachment 5

Enforcement Addendum (Enforcement Confidential/FOIA Exempt)

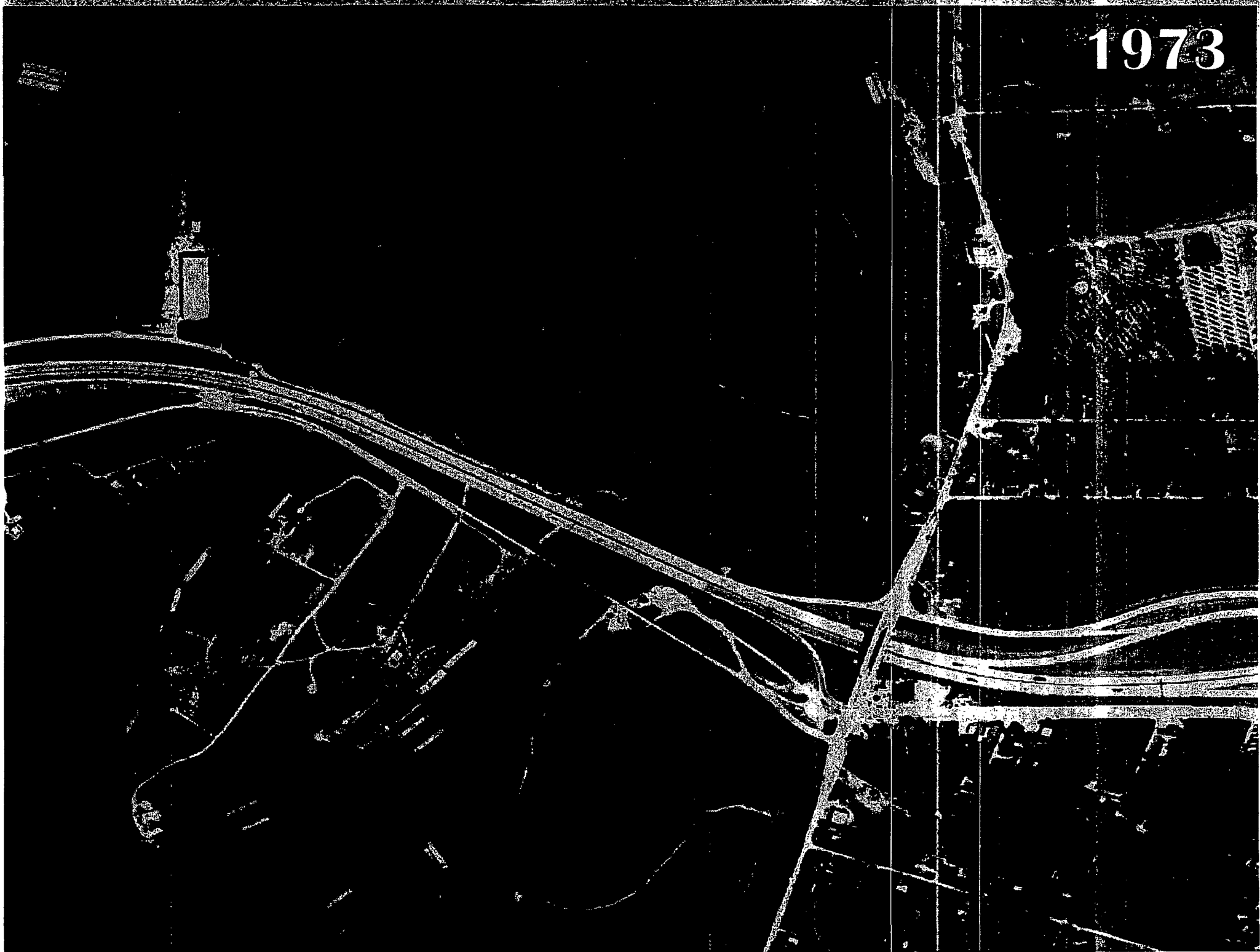
Attachment 6

Historical Aerial photos of site

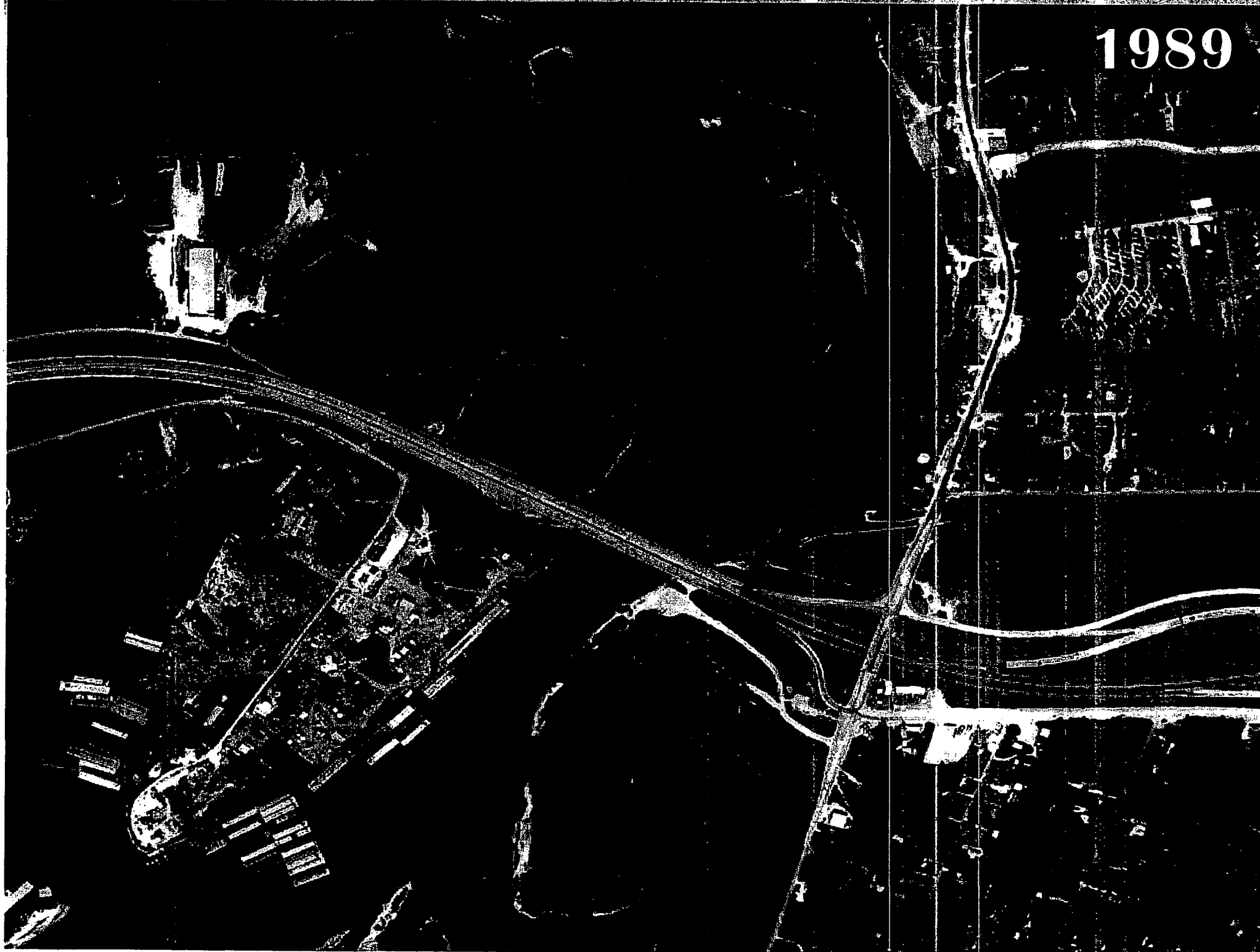
Oct. 16, 1966



1973



1989



Dec. 8, 2000

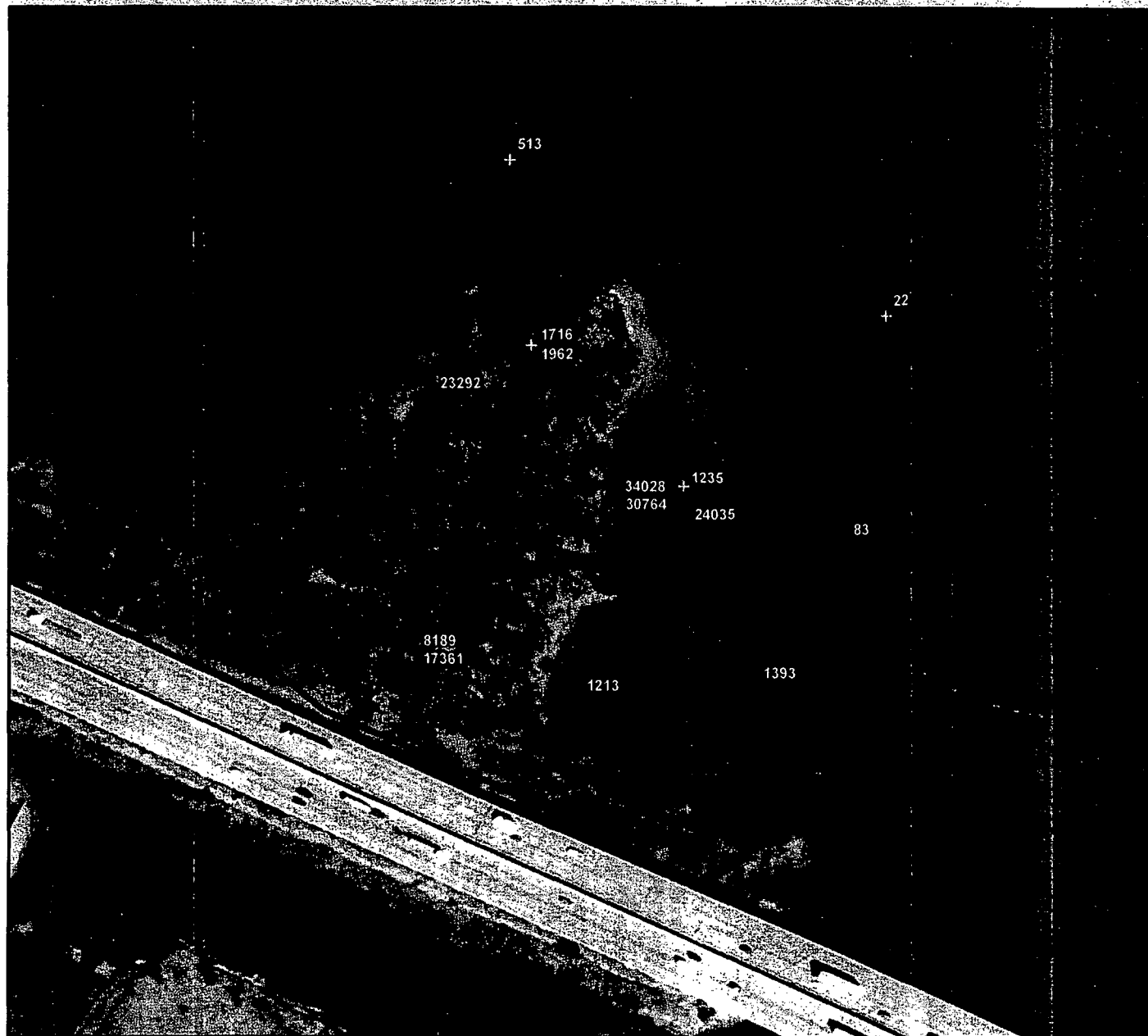


Jan 9, 2008



Attachment 7

1966 Datum Map with original impoundments line superimposed



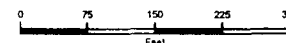
San Jacinto River Waste Pits

Surface Sediment Samples*

- ⊕ URS (2010)
- TCEQ and USEPA (2006)
- U of H and Parsons (2006)

□ Original Perimeter
of Impoundments

*2,3,7,8-TCDD Equivalents (TEQs) in Surface Sediments
(pg/g dw, ND=1/2DL, WHO 05)



Sources:

Aerial Photo: Digital Globe, 2007.
Sample Data: Database compiled by Integral Consulting, January 2010. Sample sources include URS, TCEQ, US EPA, University of Houston, and Parsons.
Impoundment Boundaries: Created by EPA Region 6 using 1966 aerial photo from USGS.

EPA makes no claims as to the accuracy of the data or its suitability for any particular use.

Map created: March 17, 2010



EPA Region 6
GIS Support Team
Dallas, Texas
20100317MCL01

APPENDIX B

LIST OF POTENTIALLY RESPONSIBLE PARTIES SAN JACINTO RIVER WASTE PITS SUPERFUND SITE

1. International Paper Company, Inc.

C T Corporation System
Registered Agent for International
Paper Company
800 S. Gay Street, Suite 2021
Knoxville, TN 37929-9710

International Paper Company, Inc.
c/o Champion Paper
3020 Dow Center
Midland, MI 48674

2. McGinnes Industrial Maintenance Corporation

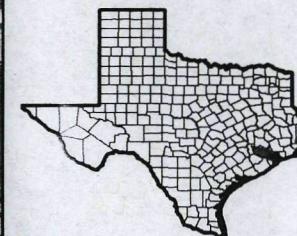
C T Corporation System
Registered Agent for McGinnes
Industrial Maintenance Corporation
350 N. St. Paul Street
Dallas, Texas 77002

McGinnes Industrial Maintenance
Corporation
2859 Paces Ferry Road, Suite 1600
Atlanta, Georgia 30339




APPENDIX C

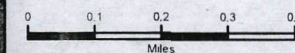
**SAN JACINTO RIVER WASTE PITS SUPERFUND SITE
SITE MAP**

San Jacinto River Waste Pits Location Map



Legend


-  Preliminary Perimeter
-  McGinnis Parcel
-  Northern Impoundment Perimeter

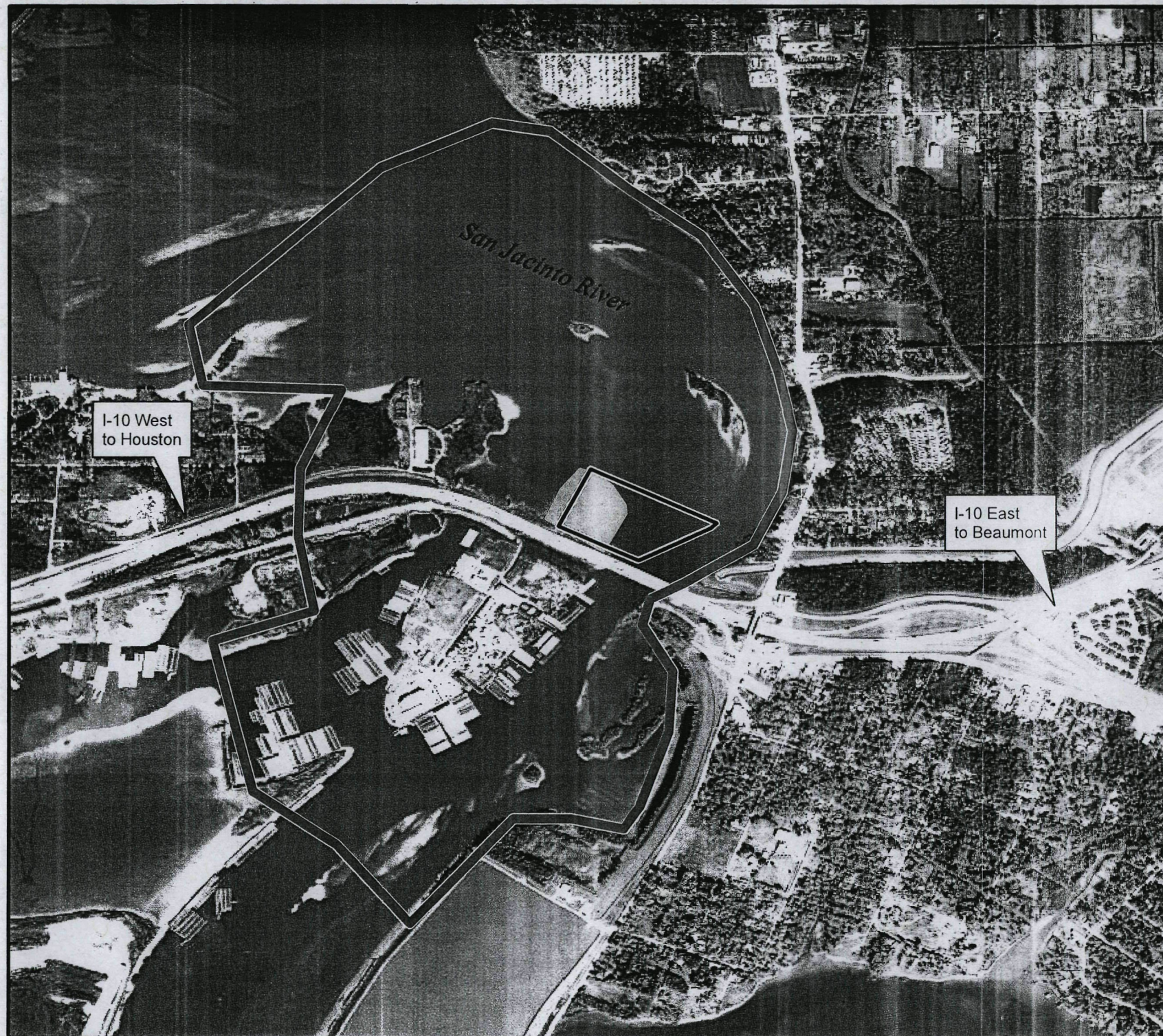


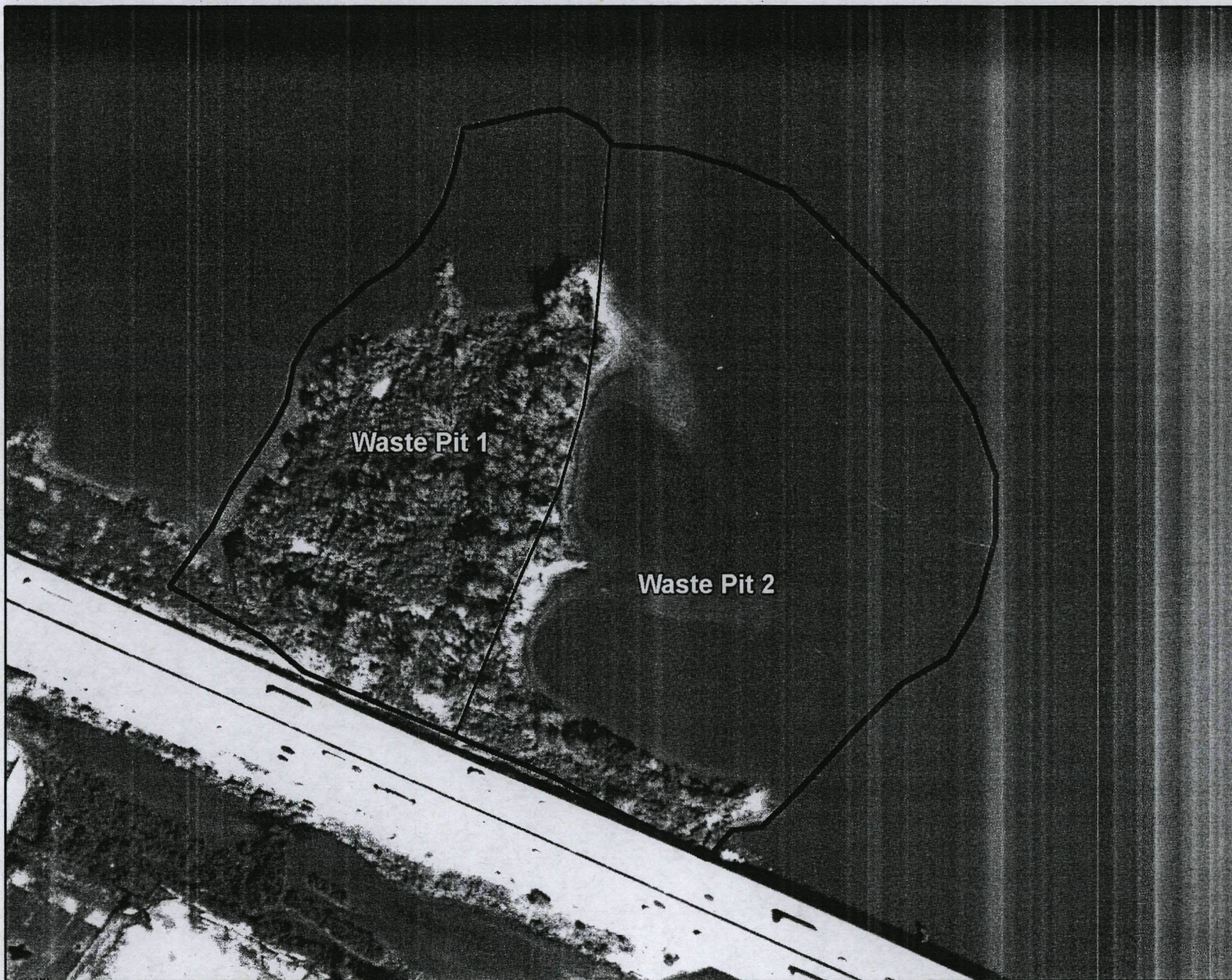
Sources:
Aerial Photo: Digital Globe, 12/01/2007
McGinnis Parcel: Harris County Appraisal District, 2008.
Northern Impoundment: EPA R6 GIS digitized from Univ. of Houston Power Point Presentation

EPA makes no claims as to the accuracy of the data or its suitability for any particular use.


Map created: July 8, 2009

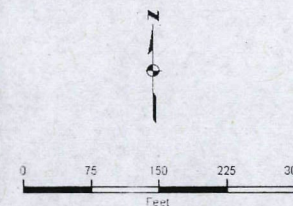
 EPA Region 6
 GIS Support Team
 Dallas, Texas
 20090708JD02





San Jacinto River Waste Pits

 1966 Original Perimeter
of Impoundments



Sources
Aerial Photo: Digital Globe, 2007
Impoundment Boundaries: Created by
EPA Region 6 using 1966 aerial photo from USGS

EPA makes no claim as to the
accuracy of the data or its suitability
for any particular use.

Map created March 17, 2010



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GIS Support Team
Dallas, Texas
20100517ML02

APPENDIX D

**SAN JACINTO RIVER WASTE PITS
SUPERFUND SITE**

STATEMENT OF WORK (SOW)

STATEMENT OF WORK

TIME CRITICAL REMOVAL ACTION

SAN JACINTO WASTE PITS SUPERFUND SITE

I. INTRODUCTION

The work is to be conducted under an Administrative Order on Consent (AOC) for the San Jacinto Waste Pits Superfund Site. This Statement of Work (SOW) is an attachment to that AOC and consists of five tasks. The tasks and the schedule for performing these tasks are described in this SOW.

II. PURPOSE

The purpose of the time-critical removal action (TCRA) is to both temporarily abate the ongoing releases of waste materials from the Site into the San Jacinto River and to control unauthorized access to the waste pits. The Site's waste pits and all shoreline bordering the waste pits will be stabilized with erosion-resistant materials to reduce the likelihood of intertidal wave action and currents that could potentially mobilize waste materials contained within the boundaries of the Site. A security fence will be installed to restrict upland access to the Site. This SOW includes working with the Port of Houston Authority to coordinate notification that marine access to the Site is restricted to authorized personnel only.

The TCRA will be implemented in a way that is, to the extent practicable, consistent with future investigations and response action.

III. WORK TO BE PERFORMED

The tasks described in this section will be performed within the timeline indicated in Table 1.

Task 1 – Conceptual Design of all Removal Options

A conceptual design will be conducted on all removal options that address the "Imminent and Substantial Endangerment" finding and performance measures outlined in the Time Critical Removal Action Memorandum dated April 2, 2010 (Action Memo). From the conceptual design options, a conceptual design will be chosen that is most appropriate in addressing the Action Memo, as well as being consistent with any long term non-time critical removal and remediation strategies that may be developed for the site.

This task will include a meeting between EPA and the Respondents to review all time critical removal design options that would address the performance measures outlined in the Action memo. A technical memorandum will be prepared by the Respondents that documents all alternatives evaluated and provides a recommended alternative. Each alternative listed in the technical memo will provide an analysis of the environmental effectiveness, cost, and implementability. If field and laboratory investigations are deemed necessary to support the engineering design for the recommended alternative, a sampling and analysis plan for any field and laboratory investigations that support the TCRA design.

The EPA will review the Respondents technical memorandum and issue a decision document approving the preferred alternative that best addresses the performance measures outlined in the Action Memo.

Task 2 - Removal Action Work Plan

The Respondents will prepare and submit for EPA approval a Removal Action Work Plan that contains:

- The engineering design and specification for the recommended alternative resulting from Task 1 for the TCRA that is approved by EPA
- Identification of applicable or relevant and appropriate requirements (ARAR) of environmental laws pertinent to the TCRA

The Removal Action Work Plan needs to address design specifications and drawings sufficient to procure and manage a contractor to implement the TCRA in conformance with the approved conceptual design. The TCRA Design will include, at a minimum, requirements for the erection of security barriers, installation of the stabilization system, protection of worker health and safety, protection of the environment, inspection to verify

the installation of systems in conformance with design requirements, and documentation of the installation.

Task 3 – Secure Site

The Respondents have restricted access to the Site by erecting barriers and installing warning signs in coordination with Harris County officials. The Respondents will coordinate also with the Port of Houston Authority to provide a notification that marine access to the Site is restricted to authorized personnel only.

Task 4 – TCRA Implementation

The Respondents will procure a qualified contractor to implement the TCRA. This task begins with the mobilization of equipment and resources on-site. During implementation, the Respondents will verify that the TCRA is implemented in full conformance with the design and meeting the goals set forth in the approved conceptual design. In addition, the Respondents shall monitor environmental quality to confirm that the TCRA is implemented in conformance with ARARs.

Notification: The Respondents shall notify EPA of the anticipated start date for TCRA implementation at least 15 days prior to contractor mobilization to allow EPA to coordinate field oversight.

Task 5 – Removal Action Completion Report

The Respondents will prepare and submit for EPA approval, a Removal Action Completion Report. The Removal Action Completion Report shall include a listing of quantities and types of materials removed off-site or handled on-site, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed (including a map showing the locations of any confirmatory samples), and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, daily logs, QA/QC reports, contracts, and permits). All

analytical data collected under this Order shall be provided electronically to EPA in a format compatible with Microsoft Office 2003 data format (i.e., Access, Excel).

When submitting the final Removal Action Completion Report to EPA, the Respondents shall identify the Work that has been fully performed in accordance with this Order, and shall identify all continuing obligations, including monitoring and maintenance, required by the Order.

The final Removal Action Completion Report shall also include the following certification signed by a registered Professional Engineer, licensed in the State of Texas, who supervised or directed the preparation of that report:

“Under penalty of perjury under the laws of the United States, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

IV. PROJECT SCHEDULE

Table 1. Project Schedule		
Task Number	Task Title	Time to Complete
1	Conceptual Design of all Removal Options	Due 14 days after the effective date of the AOC.
2	Removal Action Work Plan	Due 30 days after issuance of EPA's Approval of Preferred Alternative Memo.
3	Secure Site	Shall commence within 15 days of acquiring access to the Site and surrounding areas
4	TCRA Implementation – contractor selection, planning and construction activities have begun on-site	Due 30 days after the approval of the Removal Action Work Plan.
5	Removal Action Completion Report	Due 60 days after completion of TCRA Implementation